WHY NETWORKING MATTERS MORE THAN EVER

There's more at stake than your career

Plus:

Are workfare programs worth the cost?

How first impressions work against women
“I think we’re at a moment when capitalism has to evolve dramatically in order to sustain public support.”
Conferences, dinners, and other get-togethers have resumed in many areas as the business world adjusts to life with COVID-19. Commutes are back, as are water-cooler conversations. The Wall Street Journal ran an article this past summer reminding people how to make small talk.

With all this comes renewed networking. But as you’ll read in our cover story (page 24), Rolodexes—remember those?—and business cards only scratch the surface of what networking really means or can achieve.

Chicago Booth’s Ronald S. Burt has long held that successful networking involves building deep connections with people in and beyond your social circle. Such networking could be harder to do when colleagues are working flexible schedules and signing in from home, making unscheduled interactions less likely, and when conference lunches are canceled.

But connecting with others in and beyond your group is important for personal and group success, accumulated research finds. Developing routines that enable strong connections with a diverse set of people is vital for individuals—and the society around them. As our article illustrates, networking creates cohesion not just in an office but in a country. In this time of intense political polarization, networking may be exactly what we need.

Make real connections
One of the challenges of networking is deep-seated bias. For example, when we meet new people, we form immediate impressions of them that can be laden with gender bias, says Booth’s Alexander Todorov. He has researched this issue extensively, and our feature story (page 32) details a double standard faced by women.

Booth’s Anna Costello provides more evidence of discrimination with economic consequences (page 14). Costello studies supply chains, and she and Booth’s Michael Minnis find that during the COVID-19 pandemic, businesses delayed payments more often to their suppliers with female or Black trade credit officers.

Elsewhere in this issue, we have a host of articles that may spark ideas or connections. They include an excerpt from a new book on motivation by Booth’s Ayelet Fishbach (page 39) and a discussion about the fraying social contract in capitalist countries (page 44). We present research findings about whether bigger banks truly are more efficient (page 17) and whether fracking has polluted surface waters (page 21).

If you find anything in these pages useful or enlightening, please share them with your contacts, wherever you meet or interact with them. Find us between print issues at Review.ChicagoBooth.edu, where you’ll see exclusive articles, videos, and interactive charts. And network with us by sending us an email or by following our social media channels, where you can contribute to the conversation.

Hal Weitzman
Executive director, Intellectual Capital
Editor-in-chief, Chicago Booth Review
hal.weitzman@chicagobooth.edu

Emily Lambert
Director, Intellectual Capital
Editor, Chicago Booth Review
emily.lambert@chicagobooth.edu
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Why do some people see things faster than others?

Sarah Moshary, assistant professor of marketing and a Robert King Steel Faculty Fellow, studies quantitative marketing, industrial organization, and political economy. She was a postdoctoral scholar at eBay and taught at the University of Pennsylvania before joining Chicago Booth in 2018. This issue features some of her recent research on the effects of nutrition warning labels. (Page 22)

Ronald S. Burt, the Charles M. Harper Leadership Professor of Sociology and Strategy, is interested in the way that social networks create competitive advantage in careers, organizations, and markets. A member of the Chicago Booth faculty since 1993, he also teaches in the Department of Management and Technology at Bocconi University in Milan. (Page 24)
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Alexander Todorov, the Leon Carroll Marshall Professor of Behavioral Science and a Rosett Faculty Fellow, researches how people perceive, evaluate, and make sense of the social world. His work uses multiple methods, from behavioral experiments to computational models. The author of the 2017 book Face Value: The Irresistible Influence of First Impressions, he joined the Chicago Booth faculty in 2020. (Page 32)

Ayelet Fishbach, the Jeffrey Breakenridge Keller Professor of Behavioral Science and Marketing and an IBM Corporation Faculty Scholar, is an expert on motivation and decision-making. Her book, Get It Done: Surprising Lessons from the Science of Motivation, will be released on January 4, 2022. She says she motivated herself to finish it during the pandemic “by setting daily goals, supported by loads of intrinsic motivation.” (Page 39)
THE WFH EXPERIMENT CONTINUES

Are we really more productive working from home? (Fall 2021)

“#WFH, #WFA, or #BTO—workers need flexibility to be factored into their routines, so as to feel more committed and productive overall.”

—Sanjeev Srivastav

MAXIMIZE DONATIONS NOW, OR LATER

How to get more donors or bigger donations (Fall 2021)

“One strategy produced smaller donations of time or money, but more of them; the other strategy, fewer but larger donations. At least for money contributions, I would also like to know which approach produced the larger total donation. What’s missing, at least from this summary, is how quantity versus size of donations trade off against one another. It would also be interesting to know whether one approach continues to work consistently over several years or if a variety of messages does better over time.”

—Richard Weiland

WILL BANKS REALLY LOSE A BUNDLE?

The end of ‘the end of inflation’ (Fall 2021)

“Why is it that ‘the too-big-to-fail banks will all lose a bundle if interest rates rise’? The profitability of these big money-center banks rises as the spread differential between cost of deposits and interest on loans widens with rising rates. Is the assumption here that a Fed tightening will lead to a recession and eventually lead to impaired loans? If so, then it would be better to state short-versus long-run scenarios.”

—Walter O’Leary

John H. Cochrane responds: Usually, banks borrow short and lend long. Thus, when short-term interest rates rise, banks’ borrowing costs rise, while the interest and principal repayments they receive on their loans do not change. Higher interest rates thus hurt the profitability of banks. That’s the simple mechanism I was referring to.

DO YOU LIKE A DULL, SLOW BUSINESS?

Why entrepreneurs find it hard to scale up (Published online, August 2021)

“Ayelet Fishbach responds: Good question. In our studies, asking people to “make a difference” generated a larger total. But note that the goal isn’t always to maximize the total donation. When soliciting a class gift, for example, a school might prioritize getting close to 100 percent participation over the size of the gift. Further, it’s possible that by creating a larger network of donors, you’ll maximize the total in future campaigns, only not immediately.”

—Irani Arráiz
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In a new report, researchers at Chicago Booth’s Rustandy Center for Social Sector Innovation show the most commonly disclosed corporate social responsibility metrics from S&P 500 firms. The researchers find that firms got a boost in their ESG (environmental, social, and corporate governance) scores for disclosing more metrics, regardless of performance. To read the findings, visit bit.ly/CSRmetrics. If you’re interested in research insights such as these, sign up to get the latest from the Rustandy Center, Booth’s hub for social impact.
Millions of people who have neither mined nor traded a bitcoin are nevertheless paying for bitcoins to exist. That’s because the vast computing power needed to create new bitcoins consumes enormous amounts of electricity and has driven up energy bills for residents and businesses, according to University of California at Berkeley’s Matteo Benetton and Adair Morse and Chicago Booth’s Giovanni Compani.

In the United States, crypto mining could cost residential and business ratepayers $1 billion a year, the researchers estimate. Bitcoin miners have been draining so much electricity in parts of China that the authorities are kicking them out of the country, in part to reduce coal consumption and help meet the nation’s carbon-reduction targets. Cheap electricity in places such as Texas is expected to make the US a leading refuge for crypto miners.

Bitcoin mining, or crypto mining, is the process of generating new bitcoins by solving ever more complicated puzzles. It’s much like using computers to crack complex codes. As more of the tokens are mined, the puzzles get harder, so people engaged in the activity need more powerful computers. Bitcoin mining now consumes 0.5 percent of the world’s electricity, and usage is rising, according to the researchers.
Benetton, Compiani, and Morse focused on Upstate New York and China as two of the world’s major bitcoin-mining locations. They analyzed public records of electricity prices and usage, as well as the price of bitcoins, starting with 2011 in China (two years after Bitcoin was launched) and 2016 in New York (shortly before it became a mining center). Benetton and Compiani received financial support from Ripple’s University Blockchain Research Initiative.

In Upstate New York, the researchers find that electricity rates have gone up in response to rising demand. Their study demonstrates that because of bitcoin mining’s power usage, households paid an additional $165 million a year in energy costs, while businesses paid an extra $79 million. In China, where more than two-thirds of the world’s crypto mining took place over the past decade, electricity rates are set by the government and inflexible to demand. Crypto miners there were crowding other industries out of the market and forcing electricity to be rationed, the research suggests.

When the price of bitcoins was high, the effects were magnified, Benetton, Compiani, and Morse find in their analysis of bitcoin exchange rates relative to the US dollar. Crypto miners are compensated in bitcoins, “so the higher the price of Bitcoin, the higher the reward, and the more there is incentive for miners to mine intensively,” Compiani says.

When crypto miners entered a local economy in China, fixed asset investment dropped by 0.36 percent annually and wages fell by 0.68 percent, the researchers find. A potential solution would be for governments to levy additional taxes, but most governments already view bitcoin miners as a solid source of revenue because their taxable profit margins can be high. Local governments relying on bitcoin miners for tax revenue will be hesitant to drive them to other towns by applying local levies.

At the same time, the researchers calculate that in Upstate New York, crypto mining was associated with an increase in tax revenue of just $40 million, while the local welfare cost including higher electricity bills came to more than $240 million.

That’s not to say bitcoin mining is all bad. The researchers point to potential benefits—for example, of the taxes the industry does pay—and suggest future research might focus on other societal goods, such as the democratization of payment systems. Still, their conclusions about the total social costs of crypto mining might be generous, as they did not account for the environmental effects.

One other wrinkle—the supply of bitcoins is capped at 21 million. Since 2010, nearly 19 million tokens have been mined. While it may seem that the bitcoin supply limit will cause the energy drain to go away, it’s not going to happen soon. The puzzles are becoming so complex that mining the last bitcoins will take longer and will be even more energy intensive, like trying to draw the last drops of oil from a once-flourishing well.—Michael Maiello

As bitcoin prices surged, so did electricity usage
Crypto mining drove one US town’s spike in electricity usage in January 2018, but after the town declared a moratorium, its usage realigned with that of a neighboring town.

Businesses’ electricity consumption in two towns in Upstate New York
Index: 100 = levels in December 2017, when the price of bitcoins spiked to a record high

Plattsburgh, home of two crypto-mining operations
Peru, with no crypto mining

Bitcoins are notably volatile. The cryptocurrency hit a record high of more than $63,000 in April 2021, before quickly plummeting to less than $30,000. Wild overnight swings are common, driven by everything from the musings of Elon Musk to the actions of regulators.

But optimistic, newer investors—many of whom are younger than average and have lower incomes and fewer assets—are key to the price surges, find University of California at Berkeley’s Matteo Benetton and Chicago Booth’s Giovanni Compiani.

On the premise that beliefs play an important role in determining economic outcomes, the researchers set out to understand what people are thinking when they invest in cryptocurrencies. After all, the digital tokens have no future earnings or cash flows and aren’t even “real” currencies, lacking the backing of any major central bank.

The researchers analyzed three surveys of more than 30,000 bitcoin investors between 2015 and 2018 as the digital token characteristically soared and plunged: the Survey of Consumer Payment Choice by the Federal Reserve Bank of Atlanta; the mobile-banking report from the 2018 ING International Survey; and a survey by an anonymous US-based trading platform with global customers.

Benetton and Compiani find that the enthusiasm of newer crypto investors tends to drive values up. This group—including younger, less-educated, and lower-income investors—was responsible for about 38 percent of the price appreciation.

NEwER INVESTORS ARE DRIVING BITCOIN SWINGS

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during a boom in the price of bitcoins in December 2017, the research shows. Members of this group invested more than their seasoned counterparts and were potentially exposed to greater losses on the downside, raising questions about how to warn investors of the risks.

“This broadens the horizon a bit to this idea of the democratization of finance,” Compiani says. Apps and trading platforms have made it easier for people to trade via their phones and tablets, and while there are many benefits to providing such easy access to the market, he notes that “the risk is that maybe this will facilitate some sort of bubble-like patterns like the one we found with cryptocurrencies.” He points, as an example, to GameStop, whose stock skyrocketed in early 2021, driven in part by enthusiastic retail traders.

The researchers also find that investor concerns about the massive amounts of computing power and the vast quantities of energy needed to create bitcoins and other cryptocurrencies such as Ethereum matter to their value. Using their model, Benetton and Compiani find that if investors became aware of these concerns they would move funds into digital tokens that rely on a more energy-efficient system such as the Ripple network. This would then translate into changes in market prices, with Bitcoin and Ethereum values falling by 12 percent and Ripple gaining 6 percent. (Benetton and Compiani received financial support from Ripple’s University Blockchain Research Initiative.)

While it may be tempting to dismiss cryptocurrency pricing as purely sentiment driven, the work by Benetton and Compiani suggests that the priorities of crypto investors can be measured, understood, and potentially even predicted. This might help researchers develop valuation metrics using the principles of supply and demand that will help investors prudently incorporate the asset class into their portfolios.—Michael Maiello


When first-time buyers jumped in

While Bitcoin has been available since 2009, research finds that the majority of cryptocurrency investors did not make their first purchases until after 2015, when the price dramatically climbed.
Now the rules have changed, and it will exacerbate that fragmentation to a much greater degree.”

Cookies are tags from websites that live on a person’s computer or internet-capable device. When you search for shoes online, the search page and the sites you visit leave cookies that can be collected to tell a company such as Zappos that you’d be a good target for an ad.

Because people use more than one device, a third-party company can collect cookie data to see a person’s browsing history. These companies use a data-linking strategy to cross-reference cookies to see where names, email addresses, and other identifying features overlap and then stitch together a more complete user profile.

Boston University’s Tesary Lin and Chicago Booth’s Sanjog Misra evaluated the alternatives for advertisers. Building an analytical framework and conducting an empirical experiment, they find that advertisers have few good options for constructing accurate user profiles.

“The system was already broken and imperfect,” Misra says. “Any time there is fragmentation, anything you want to measure is going to be off to some degree.

Google announced this year that it would eliminate automatic third-party cookies on its Chrome browser. The company joins Apple and Mozilla, which earlier made users opt in to the technology on their browsers. While Google’s move may be positive for users who want privacy, it’s bad for companies that want to target ads to specific audiences.

Without cookies, online advertisers have to piece together crumbs
user profile. Advertisers can track if an ad is effective, even if that ad is viewed on a smartphone by someone who bought the shoes on a laptop a day later.

But the picture that emerges is never perfect. People may use different email addresses on a work computer and on a tablet at home, keeping those fragments from being connected.

With Google and Apple controlling about 85 percent of the browser activity in the United States, according to web-traffic analyst Statscounter, the new restrictions make third-party cookies essentially obsolete and increase the fragmentation, leaving companies less certain about how to target ads effectively. Even companies that use data linking will have to rely more on partial links, increasing bias in their assessment of an ad’s effectiveness, the researchers write.

Could companies run trials to estimate the effectiveness of their ads on consumers, and make adjustments on the basis of a series of assumptions? The researchers conducted an experiment using data from an online seller of durable goods that included about 390,000 observations of display ads, search ads, and social media ads. They find that this approach doesn’t work because the assumptions are untenable. Assuming that all users have three devices, for example, will seriously skew the results if some users have only one device and others have seven. At best, results are approximations for large populations.

The researchers propose a third option, stratified aggregation, which would pull together fragments of data into higher-level demographic groups. This method might tell a company how well an ad works for men in New Delhi, but it wouldn’t drill down to the individual level to allow for more granular targeting.

Companies with paywalls or those that require log-ins will have an advantage, the researchers write, because they’ll be able to track users’ activity directly. Others will face significantly more fragmentation bias that will require new data-aggregation methods.

“Without these solutions, the post-cookie world can render data analytics difficult or even impossible for most firms, while a few established firms who can obtain complete user data using a login wall can have a stronger incumbent advantage,” the researchers write. –Brian Wallheimer

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**A MORE DIVERSE FED MAY BE MORE TRUSTED**

**DESPITE** workplace diversity initiatives promoted in the United States in recent years, white men are significantly overrepresented in leadership positions at many organizations, including the Federal Reserve.

But increasing diversity at the Fed could have significant benefits for both the policy makers and the public, according to research by Boston College’s Francesco D’Acunto, Swiss Finance Institute’s Andreas Fuster, and Chicago Booth’s Michael Weber.

The researchers surveyed more than 9,000 US consumers—men and women who were Black, white, and Hispanic. All survey respondents read Federal Open Market Committee (FOMC) forecasts for unemployment or inflation that were paired with an accompanying photo of a 2020 FOMC member.

Some respondents saw a photo of Thomas Barkin, one of nine white men on the committee. Others saw a photo of the only Black FOMC member, Raphael Bostic. The final group saw a photo of Mary C. Daly, one of four women (out of 15 members total, including five alternates).

The respondents received a series of questions along with the reports and were asked to rate their trust, on a seven-point Likert scale, in the Fed’s ability to manage inflation and unemployment, and to rate their faith in the policy makers to act in the best interest of all Americans. Per the researchers, both forms of trust correlate with having economic expectations that line up with FOMC forecasts.

Women and Black survey takers were significantly more trusting in the Fed when they saw a photo of Bostic or Daly, the researchers find. White men, on the other hand, had no less trust in the Fed if presented with the photo of Daly or Bostic than if presented with the image of Barkin.

The researchers also find that women and Black respondents who saw a photo of Bostic or Daly formed macroeconomic expectations—particularly on unemployment—that were closer to the forecasts they read. These two groups were more likely to say they found the survey interesting when they saw the photo of Bostic or Daly, and to spend more time with the content presented.

A follow-up survey with about one-third of the original respondents further explored the idea of willingness to absorb information from the Fed.

These respondents were divided into three groups and asked to pick one of two short articles to read, each featuring a different policy maker’s statement about the future of the US economy. One group was told that the policy makers quoted were from the Congressional Budget Office and the Fed, respectively. The other groups also learned the policy makers’ names, which made clear that either one was a woman or that both people were men.

Women who learned that one policy maker was a woman were much more likely to want to read an article from the Fed than those in the other two groups. Men, on the other hand, made similar choices no matter which names were given and even when names were not given. Overall, the researchers say, having a more diverse Fed could be a boon for both the effectiveness of policy communication and public trust in the institution.

—Rebecca Stropoli

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Are workfare programs worth the cost?

Workfare programs, which offer temporary jobs to economically disadvantaged people, are prevalent across the world, and may appear superior to traditional welfare programs. Regular work experience can boost future employment opportunities and earnings, plus improve overall well-being.

However, the positive long-term effects of workfare programs are limited, and it isn’t clear they’re more effective than simple cash-transfer programs, according to Chicago Booth’s Marianne Bertrand, Bruno Crépon of France’s Center for Research in Economics and Statistics, and the World Bank’s Alicia Marguerie and Patrick Premand.

The researchers analyzed the effects of a World Bank-funded program implemented in Ivory Coast, Africa, following a political crisis in 2010–11. Workfare programs, they write, often target areas that have experienced recent shocks, such as violent uprisings or natural disasters.

The program, implemented in four waves from 2012 to 2015, recruited men and women between the ages of 18 and 30. Some were unemployed, and others were self-employed or had low-paying jobs with no formal contracts. Ultimately, 12,000 participants worked on road maintenance crews six hours a day, five days a week, for six to seven months, making minimum wage. All chose to apply for the program and were selected through a lottery system.

Bertrand, Crépon, Marguerie, and Premand analyzed the period from July 2013 to February 2014, when participants were placed into one of three road maintenance crews. Two of the groups also gave participants training in basic entrepreneurship and job searches. Surveys were conducted before, during, and 12–15 months after the program.

During the program, the share of participants working in wage-paying jobs jumped by 48 percentage points, and weekly hours worked increased by 16. Meanwhile, the share of participants who were self-employed dropped by 10 percentage points, and self-employment hours decreased by six per week. “This highlights that youths reorganize their portfolio of activities to participate in the program,” the researchers write.

Participants also reported higher earnings and savings, positive changes in work habits and behaviors, and increased well-being during the program. Fifteen months after the program ended, participants overall still had higher savings than they did before the program, along with an elevated level of psychological well-being.

However, the surveys registered no lasting behavioral changes, nor a better chance that someone would be employed in a stable wage-paying job. There was a small positive impact on savings, but much less than the cost of the program.

Having people self-select into workfare may be a problem, the researchers write. Workfare programs often involve manual labor, and are premised on the notion that only the most disadvantaged will volunteer to do work that may be considered unpleasant. But in developing countries, where many people are underemployed through informal jobs that pay below the legal minimum wage, workfare programs may cast too wide a net, failing to attract only the most vulnerable (those with the fewest earning possibilities).

Using machine-learning techniques to analyze new potential ways to target participants, the researchers calculate that the Ivory Coast program could have been 30–50 percent more cost-effective if it had accepted only women, or only participants with the lowest predicted baseline earnings. Even with this improved targeting, however, the overall impact on earnings would have still been below the program’s costs.

This doesn’t necessarily mean countries should abandon workfare programs, the researchers write. The program positively affected well-being and savings, and workfare could also potentially reduce crime, given that a 30-hour increase in work engagement for each participant leaves less time for other activities. Paying people to maintain and upgrade public roads, reservoirs, and the like could also benefit regions with poor infrastructure.

However, the researchers note, some of these gains might also be achievable through a simple cash-transfer program. The benefits would have to be quite large—probably unrealistically so—for a workfare program to be cost-effective.

—Rebecca Stropoli


WHY ESG INVESTING IS A RACE TO THE BOTTOM

“ESG [Environmental, Social, and Governance], to most of the world, means creating social impact with your dollars. A subset of investment managers and ESG people inside the system know that they have a fiduciary duty and have convinced themselves that ESG means higher returns and social impact. The products, because of a lack of any kind of rigor or regulation on what is ESG and what’s not and what’s an impact and what’s not, have gone in a direction where everything is being sold as ESG, and it’s a race to the bottom.”

—TARIQ FANCY, of Rumie and formerly of BlackRock, where he was chief investment officer for sustainable investing, speaking on the Capitalin’ podcast, presented by Chicago Booth’s Stigler Center for the Study of the Economy and the State
What economists get wrong about the labor market

When workers change jobs, pause their careers, reenter the workforce, move into new fields, or retire, the resulting labor-market churn tends to follow a predictable pattern, according to a large body of research. People generally move from lower-productivity companies (which shrink and eventually go out of business) to higher-productivity businesses (which tend to grow faster over time), leading to a more productive economy.

This broad-brush theory, however, obscures a significant amount of opposite moves from high-productivity to low-productivity companies, according to the Central Bank of Chile’s Elías Albagli, Mario Canales, Matías Tapia, and Juan Wlasiuk and Chicago Booth’s Chad Syverson. In an analysis of the labor market in Chile, they find that up-the-ladder transitions only marginally outnumbered lower-productivity moves.

“It’s true on average that these job changes are productivity enhancing, but it turns out it’s just barely on that side of the scale,” Syverson says. “This net productivity enhancement actually hides a lot of changes in both directions. Workers are going not just from less- to more-productive companies, but also quite often from more- to less-productive companies too.”

It’s an important issue because productivity gains are an economy’s most important source of overall growth, according to Syverson. “If the economy increases its productivity faster, that raises average incomes faster,” he says.

The researchers analyzed data from a matched employer-employee Chilean census from 2005 to 2016. They find that 49 percent of job changes involved workers moving from higher- to lower-productivity companies. Though the researchers expected to see some productivity-diminishing moves, they were surprised by the nearly even split, Syverson says. The findings suggest that job-change decisions are complex and that workers switch employers for reasons other than earning higher pay, including shorter commute times or proximity to their children’s school, he says.

“There are all these other reasons for changing jobs, which we knew existed, but we didn’t realize how big they were and how modest the enhancement was,” Syverson says.

The researchers also find demographic differences between workers moving to more- or less-productive companies. Most of the productivity-enhancing job changes were among workers going directly from one job to another, and moving among high-productivity companies, rather than among those who had been unemployed or working off the books. Younger workers, high-skilled workers, female workers, and workers with longer job tenures were more likely to move to higher-productivity employers.

The findings offer insights into the productivity mechanics of job reallocation and suggest that reducing labor-market friction even slightly could lead to large productivity gains, Syverson says. Countries might encourage this by improving job-search platforms, reducing traffic congestion, decreasing commuting costs, or offering greater remote-work flexibility, for example.

“It doesn’t take much net increase in productivity from worker reallocations to get aggregate productivity growth that’s pretty big, simply because so many people are changing jobs all the time,” he says. “If you get a small fraction of those to become productivity enhancing, you get a lot of extra productivity growth out of it.”

—Sarah Kuta


Job changers often went to less-productive companies

When Chilean workers changed jobs, they were not strongly likely to land at a company that was more productive than the one they left.

Probability that someone changing jobs ended up at a more productive company

<table>
<thead>
<tr>
<th>Productivity level of the company that the job changer left</th>
<th>Probability</th>
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<tbody>
<tr>
<td>0th percentile</td>
<td>58%</td>
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<tr>
<td>20th percentile</td>
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<td>80th percentile</td>
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Mathematical probability were the job changer’s new company chosen at random

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—Sarah Kuta


Winter 2021/22  Chicago Booth Review  13
Supply-chain disruptions were big news during the COVID-19 pandemic. This is your area of expertise, and what have you seen or learned? What we find is that customers discriminate against their suppliers when deciding which bills to pay. When COVID-19 hit, customers delayed payments to their suppliers with female or Black trade credit officers at a 10–20 percent higher rate relative to their payments to nonminorities.

I’ve been working on supply-chain research for the past 10 years, seeking to understand the risk involved in the payments process. In particular, what can a supplier do to mitigate the risk of customers not paying their bills? Collecting payments on time is critical to a supplier’s liquidity management. Yet, what I noticed is that there is a lot of unexplained variation in terms of when suppliers get paid. This got me thinking: Does it matter who the lead trade credit officer is, and, specifically, do white men get paid more quickly than their minority counterparts? We needed a setting where we could statistically capture these effects.

The pandemic provided that setting? Yes. In normal times, a supplier has ways to punish a late-paying customer. The recourse can be to simply tell the customer, “I won’t sell you any more goods until you settle your bill.” These market-based disciplinary mechanisms keep payments
in check and help to dampen the effects of discrimination on the payments process. But at the first onset of COVID-19, when suppliers wanted to make sales and there weren’t a lot of customers knocking on their doors, they couldn’t use these mechanisms. Therefore, if there is discrimination in payment decisions, we would expect it to show up more prominently during the pandemic.

Q3 What did you find?
Booth’s Michael Minnis and I used a data set of detailed trade credit networks with granular transaction-level data between suppliers and their corporate customers. We identified the lead trade credit officers in the data and characterized them as a minority or not, defining minority as either female or Black. On average, we find that suppliers with minority lead trade credit officers saw a larger increase in past-due accounts during the pandemic relative to suppliers with lead credit officers that were white men. Importantly, the granularity of our data allowed us to control for economic differences between minority groups and nonminority groups, which further allows us to attribute our results to discriminatory behavior.

Q4 What can be done about this? We provide another important piece of evidence that certain groups face disadvantages because of their race and gender. In order to help address discrimination and the ways it might affect customers’ payment behaviors, we recommend antibias training programs and other interventions aimed at curbing the effects of explicit and implicit discrimination on important supply-chain decisions.

WHAT ELSE IS DRIVING LATE PAYMENTS?

TRADE CREDIT is one of the most important sources of short-term financing for businesses, amounting to trillions of dollars worldwide. Paying suppliers late helps companies to manage cash and put pressure on suppliers to deliver high-quality goods and services on time. It also puts suppliers in the position of acting as de facto lenders.

Companies make calculated decisions about which suppliers to pay late and how long to delay payment, according to Chinese University of Hong Kong’s Jing Wu, National Chengchi University’s Hsiao-Hui Lee, and Chicago Booth’s John R. Birge. Their study identifies some of the financial and market factors that affect companies’ late payment decisions and behaviors.

The study considered only factors that appear in firms’ financial statements, as well as market characteristics and late-payment experience.

Wu, Lee, and Birge cite a 2018 survey by credit insurance provider Atradius as finding that 88 percent of companies in Western Europe had frequent late payments accounting for 42 percent of trade credit. Another credit provider, Euler Hermes, found in 2018 that global trade credits were overdue an average of 66 days, up 10 percent in a decade.

The researchers analyzed a data set from business insights company Dun & Bradstreet of invoices issued by and payments received from more than 7,000 US companies from 2004 to 2016. They find that businesses with greater market power were likely to make timely payments to their most important suppliers, those that provided inputs worth the most in dollar terms. And while companies awaited payments from their own downstream customers, they often shifted those costs upstream to suppliers by delaying payment, regardless of the suppliers’ importance.

“Companies are strategic about these payment delays, using them for market power or to do this type of cost shifting,” Birge says.

Other factors that affected the timing of companies’ payments included their access to financing, the speed at which they could borrow money, and inventory turnover rates, according to the research. Companies with good access to financing were more likely to pay on time. And companies that could borrow money quickly tended to make more late payments.

Though they had a greater need for making late payments to cover cash gaps, businesses with slow inventory turnover made fewer late payments, most likely because they were in a weak bargaining position with suppliers, the data suggest. Companies with prior contract breaches were likely to continue making late payments in the future, though they were less likely to do so with important suppliers.

The research suggests that suppliers may want to proceed with caution if they’re planning to offer trade credit to companies with large market shares or long accounts-receivable delays.

When writing up contracts with some downstream companies, they may want to build in explicit deadlines or higher late-payment penalties, for example. At the same time, if suppliers agree to work with powerful downstream companies, they should deliver high-quality goods and services on time to increase the likelihood of on-time payments, Birge says.—Sarah Kuta

Global supply chains can hurt a company’s credit

As the coronavirus pandemic began its sweep across the world in 2020, it sent shockwaves through global supply chains. When Chinese factories closed in January and February to help stop the spread of the virus, it forced the US businesses that relied on them either to shift manufacturing elsewhere or simply wait.

But in addition to the logistical disruptions it created, the pandemic shutdown in China had another, less-obvious effect on US companies with Chinese suppliers: it hurt their credit. The credit risk of these businesses rose and fell as Chinese factories shut down and reopened, according to George Washington University’s Şenay Ağca, Chicago Booth’s John R. Birge, Chinese University of Hong Kong PhD student Zi’ang Wang, and CUHK’s Jing Wu. They find a similar pattern for US companies with Chinese customers during the pandemic.

The findings demonstrate one way that suppliers influence their partner companies, for better or worse. Doing business with suppliers in another country can expose a US company to increased risks, but it can also provide a buffer against local shocks, the researchers find.

As a business owner, “you may think that what happens in China or Latin America is just isolated to that country, that those events aren’t affecting your access to credit,” Birge says. “But what this study says is that, no, actually they do. Things that happen to your suppliers in China can also affect your credit as well. These events can affect the health of your business. It’s showing the importance of those suppliers to businesses.”

To study the relationship between supply-chain activity and partner companies’ credit risk during the pandemic, the researchers analyzed the credit-default-swap spreads of 545 US companies with Chinese suppliers between January 2020 and April 2020. In a credit default swap, the seller agrees to compensate the buyer if the underlying entity defaults. The researchers used credit-default-swap spreads as a gauge of companies’ credit risk.

As Chinese factories shut down in early 2020, the credit risk of US companies with Chinese suppliers increased by an average of 6–7 percent. Then, when Chinese production resumed in March and April, the US companies’ credit risk decreased by 16–29 percent. This suggests that companies may benefit from having a geographically diverse set of supply-chain partners, Birge says.

Household demand also played a role in how supply-chain activity affected credit risk in some industries, the researchers find. For example, when Chinese suppliers shut down during the pandemic, the fact that US demand for consumer goods and electronics remained high mediated some of the credit effects for producers hurt by the supply disruption but buoyed by strong demand. Similarly, when suppliers reopened but US household demand was flagging, that affected the credit picture.

Companies with bigger debt levels relative to their assets and greater competition were more sensitive to supply-chain disruptions, whereas those with more cash on hand and growth opportunities were less affected. And because every link in a supply chain involves potential disruption, lengthier supply chains amplified the credit-risk swings of partner companies, the researchers find.

Overall, the findings offer insights for corporate leaders as they seek out—and extend—credit. If a company’s suppliers or customers are far from its base, events in those regions have credit implications. Moreover, if a company has a supplier that is nearby but that company has important ties to other regions, that supplier’s creditworthiness could be affected by adverse events. “Managers,” says Birge, “should be aware of both the effects on their own credit access as well as the potential impact from their partners.” —Sarah Kuta

Bigger banks are good for bankers but not customers

Big banks have remained big, even in the wake of the 2008-09 financial crisis and discussions about too-big-to-fail institutions. The top five US banks had, a decade after the crisis began, approximately 46 percent of US banking assets, slightly more than they’d had before the crisis, according to the World Bank.

As big banks argue that they provide advantages such as efficiency and reach that outweigh any problems or systemic risks, regulators and policy makers have allowed the growth to continue. But research by Chicago Booth’s Kilian Huber suggests that bigger banks don’t provide many of the advantages claimed—and that consolidation may be motivated by higher salaries for bankers.

Researchers have long explored the repercussions of bank size, with mixed results. Some papers suggest that bigger banks may be more efficient and more stable than their smaller counterparts, and ultimately help their business customers grow faster. Others argue that big, complex banks may hurt borrower growth and increase systemic risk.

“Given the ambiguous theoretical predictions, the effect of bank size on firm growth is an empirical question,” writes Huber, who analyzed data from post-World War II Germany to produce an answer.

After the war, the Allies broke up Germany’s three biggest banks, arguing that these institutions had contributed to the Nazi war effort. Commerzbank, Deutsche Bank, and Dresdner Bank were split into 30 independent “treated” banks, which were later permitted to reconsolidate. A first round of reforms, in 1952, led to nine banks from 30. A second round, in 1957, produced the same big three that had existed before.

Most banking in Germany was relationship based over this period, so customers mostly stuck with their banks through any changes.

How did those treated banks and their customers perform relative to smaller banks not subject to the reforms? Huber found a host of potentially useful data—including public companies’ employment, revenue, assets, liabilities, and bank debt—in several historical volumes, which he digitized, making it possible for him and subsequent researchers to more easily access and analyze the information. His data set includes the bank relationships of about 5,900 companies, the employment growth of 2,300 companies, and the balance-sheet variables of 400 companies.

Before 1952, the trajectory at many companies was largely the same, he observes, but that changed after the first set of reforms. Loan and deposit growth slowed more at the treated banks relative to the others. Consolidations didn’t make banks more cost-efficient or profitable.

As for customers, as their banks grew, the rates at which they added bank debt, employees, and revenue per worker didn’t improve, and small and young companies actually did worse. The same was true for municipalities with more exposure to consolidating banks.

“These findings show that increased bank size does not always generate improvements in bank efficiency or firm growth, in contrast to leading theories,” Huber writes. “Furthermore, opaque (small, young, low-collateral) firms grew more slowly after their banks got bigger, consistent with the view that bigger banks are worse at processing soft information.”

While borrowers didn’t benefit, banks themselves did, the research suggests. When banks combined, managers’ pay rose, and the managers received more media attention, which they may have enjoyed, Huber writes.

“How did their earnings distribution change? Did the headline banks become more profitable? Did their customers perform relative to smaller banks not subject to the reforms?”—Dawn Kissi

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UNEMPLOYMENT QUESTIONS? ONLY SOME STATES ANSWER THE CALL

WHEN IT COMES to getting help with US unemployment benefits and supplemental nutritional programs, geography really does matter, according to University of Chicago Harris School of Public Policy’s Oeindrila Dube and Chicago Booth’s Sendhil Mullainathan and Devin G. Pope. Their research finds that it’s easier to get a representative on the phone to answer questions in certain states. And it’s easier across the United States to get a human on the phone to help with income-tax questions than for questions about unemployment insurance or government food benefits.

The researchers took a mystery-shopping approach, hiring 10 assistants to make more than 2,000 phone calls to state government offices in an effort to determine the probability of reaching a live person. The calls were placed to four types of offices across all 50 states between September 2020 and March 2021. Each caller spent as long as 45 minutes trying to reach a human to help with unemployment insurance, Supplemental Nutrition Assistance Program (SNAP) benefits, Medicaid, or income taxes.

The study finds “significant variations across state and government programs.” The assistants fared the best in New Hampshire and Wisconsin, where more than 80 percent of callers reached a person to help them. They fared the worst in Georgia and New Jersey, where fewer than 20 percent of their calls were connected with representatives.

Other states where representatives were easier to reach include Indiana, Mississippi, Tennessee, and Vermont. The states with the lowest pickup rates included Connecticut, Hawaii, Illinois, and New Mexico.

“In contrast to businesses, which often face strong competitive pressures to provide quality customer support, states have very little oversight and incentive to make sure that their call systems are efficient,” the researchers write. “Consequently, already vulnerable populations will face additional hurdles because of the faulty nature of the system.”

Across the country, callers with tax questions were almost twice as likely to reach a representative than callers with questions about unemployment, the data indicate. Callers to tax offices also were more likely to reach a representative than those calling Medicaid or SNAP offices. In Hawaii, Missouri, and New Jersey, no calls about SNAP benefits were answered by representatives, while at least some calls to income-tax offices were.

Research assistants with questions about unemployment never managed to reach representatives in Georgia, Hawaii, Illinois, Maryland, Michigan, Nevada, New Jersey, New York, Pennsylvania, or Virginia. They had the best chances of getting through in Idaho, New Hampshire, and South Carolina.

In states where representatives were harder to reach, there was no evidence that governments were compensating with better websites or enhanced messaging services, researchers note, adding, “Our hope is that this research can provide more accountability for state governments to improve the customer support that they provide to their residents.”

—Meena Thiruvengadam

How to streamline the US college application process

F or many students in the United States, applying to college is a massive undertaking—from researching programs and visiting campuses to writing essays and corralling recommendations. The process, often stressful, can involve considerable time, effort, and cost.

But it doesn’t need to be so difficult, research suggests. If universities told students up front their odds of being accepted, the process could be more efficient and ultimately less costly for applicants and the colleges themselves, according to Microsoft Research’s Nicole S. Immorlica and Brendan J. Lucier, Chicago Booth’s Jacob D. Leshno, and Stanford’s Irene Y. Lo. A more streamlined approach would also bring the US system more in line with how many other countries handle college admissions, including Australia and Israel.

The current process—which includes researching colleges, taking standardized tests, writing essays, and soliciting recommendation letters—might consume more than 100 hours, according to college guidance service CollegeVine (plus perhaps 50 more to prepare for entrance exams such as the SAT). US guidance counselors encourage students to apply to at least six schools, suggests a 2016 survey by Cappex, a college research service. Plenty of students courting the most competitive institutions end up applying to even more to shrink the chances of total rejection.

Colleges, meanwhile, spend time and money creating marketing materials, conducting campus tours, and reviewing applications to end up with a full (but not too full) class of students each year.

This system leads to a lot of wasted effort, the researchers warn. For example, “only 8 percent or so of Stanford applicants got in,” Leshno says. “Did Stanford really need all of the other 92 percent to write essays?” In some cases, the essays likely did determine whether applicants would fit well into the community, but in most, they were probably immaterial to the admissions decision.
A better approach, the researchers suggest, would be to communicate applicants’ true probabilities of success in advance. “That means students get to first see which colleges will admit them, and only then decide which ones to look into,” Leshno says.

The researchers used a model to formalize this idea. In it, each college internally ranks candidates according to criteria of its choosing and admits students who score above a defined cutoff. Colleges publish their admissions thresholds, so students can use them to calculate their own odds of admission and submit applications accordingly.

Helping students focus on colleges more likely to admit them would save energy and cost, the researchers write. In addition to paying application fees, students often travel to visit college campuses. When they cast a wide net and apply to many schools, their costs quickly rise. A different process could control these costs and potentially help colleges too, by more efficiently attracting the students most likely to be admitted and attend.

It would require that colleges move away from the current practice of touting their “acceptance rate,” however. Instead of letting students know their odds of meeting a threshold, universities (and media that publish college rankings, namely US News & World Report) currently publish the percentage of applicants they admit, and an acceptance rate in the single digits is considered a sign of exclusivity and desirability. “This creates perverse incentives for colleges to improve their ranking by obscuring the application process and inviting applications from students who are clearly below the universities’ bar,” Leshno explains.

The researchers also explore another option: colleges could publish their approximate rather than precise admissions criteria. This would let most students know whether or not they would be admitted, and the others could still decide whether or not to apply. Tel Aviv University has such a system in place, Leshno notes.

Indeed, such streamlined processes exist in many countries, the researchers note. They surveyed college admissions systems in the 25 countries that are part of the Organisation for Economic Co-operation and Development and have populations of at least 8 million, as well as the two most populous countries on each continent.

In some countries, they find, applicants must write subjectively evaluated essays (as in the US), or take entrance exams that aren’t graded until after college applications are submitted (the United Kingdom), or choose among programs very early in the application process (Japan). A lack of transparency and clear targets invites inefficiency. “For example, in the UK students do not know their exam scores when they apply, and the admission system includes second and third rounds for unmatched applicants,” the researchers write.

By contrast, in most countries, universities rank students on the basis of common, objective criteria, such as scores on entrance exams. The Australian Universities Admissions Centre publishes students’ exact percentile rank for each program, while other Australian programs commit to admitting every applicant who clears published cutoffs. Israeli universities offer similar clarity, providing formulas and online calculators to help applicants determine their odds of being accepted.

“In many applications, providing students with information about their admission chances can help address both stability and information acquisition,” the researchers conclude. Not to mention ease the essay pile.—Brett Nelson

On days of high dividend payouts, market returns soar

On a typical day in the stock market, returns on the S&P 500 are about 4 basis points. But on other days, returns average more than four times that amount—and it’s possible to predict when it will happen in advance.

This is the conclusion of Chicago Booth’s Samuel Hartzmark and Boston College’s David H. Solomon, who find a relationship between higher dividend payouts and higher market returns. This link, they argue, illustrates why it’s important for asset pricing models to include shifts in market demand as well as supply, regardless of why these shifts occur.

Most standard-asset pricing models, based as they are on the efficient-market hypothesis, focus on fundamentals such as projections of future cash flows or company-related news. In these models, the stock price represents all of the available information about a security and the company issuing it. A Fed announcement or word of a big government stimulus may send stocks up or down, as investors adjust prices to reflect the news—but the prevailing wisdom is that fundamentals, above all else, drive asset prices.

And yet, Hartzmark and Solomon argue, shifts in supply and demand, even if they are unrelated to market fundamentals, also play an important role. The researchers reviewed daily market behavior from 1926 through 2020—analyzing data from Booth’s Center for Research in Security Prices, Compustat, and the website of Dartmouth’s Kenneth French—and examined how returns varied when a day had large or small dividend payments.

When investors receive dividends, they often use the cash to buy more shares of stock—and not necessarily of the company that issued the dividend. If larger payouts mean more people buying stocks, do larger payouts lead to a measurable bump in stock prices? This struck Hartzmark and Solomon as a straightforward way to test the effect of investor demand on prices—especially as purchases made in the wake of dividend payments are a predictable effect of having more cash. This predictability means that the demand can’t be explained as reflecting new fundamental information. It’s precisely the sort of thing standard asset pricing models say shouldn’t influence returns.

The demand for stocks that followed a dividend payout led to measurable, immediate market outperformance, according to the analysis. Days with low dividend payments had an average return of 2 basis points and days with high dividend payments had an average return of 8 basis points. Returns on the week with the highest dividend payments were more than 17 basis points per day. Seeing a similar pattern in 58 international markets, the researchers claim this is strong evidence that supply and demand matter even for the level of the entire stock market.

“You can’t assume away the slopes of supply and demand the way we often do in financial models,” says Hartzmark.

Recognizing the importance of supply and demand could also help explain prices in other asset classes such as cryptocurrencies, they write. Bitcoin, for example, has no future earnings or cash flow, and according to asset pricing models should have a value of $0. But investors nevertheless buy bitcoins, and their demand for them could explain why 1 bitcoin is worth tens of thousands of dollars. Similarly, the fundamentals of electronics retailer GameStop didn’t change even as its stock price shot from $15 to $350. What did change, however, was investors’ desire to own shares of the previously little-noticed company.

—Michael Maiello


Investors put dividend money toward more stocks

Reviewing decades worth of US stock returns, the researchers find evidence that higher dividend payouts lead to same-day stock purchases.

Daily value-weighted market returns over 1926–2018 based on the quintile of dividend amount paid that day
Fracking is linked to surface-water contamination in many watersheds

The discovery of hydraulic fracturing, better known as fracking, is considered by many to be the most important change in the energy sector since the introduction of nuclear-generated electricity more than 50 years ago. In the United States, production of oil and natural gas has increased, energy prices have fallen, and domestic energy security has strengthened as the country has relied more on shale gas and oil and less on imports.

But fracking is also highly controversial. Critics point to health and environmental concerns, and chief among them is the impact on water quality. Pietro Bonetti of IESE Business School, Christian Leuz of Chicago Booth, and University of Bristol’s Giovanna Michelon provide the first large-sample evidence that ties hydraulic fracturing to surface-water contamination across several US shales and in many watersheds.

The water-quality changes they estimated are small and within the bounds of what the US Environmental Protection Agency considers safe. However, the researchers note that better water-quality data are needed for scientists to fully understand the surface-water impact of oil and gas development.

Unconventional oil and gas development combines horizontal drilling with hydraulic fracturing. These practices allow the energy industry to reach oil and gas reservoirs that are otherwise unattainable. Injecting millions of gallons of liquid rocks and enables oil or gas to flow.

While the industry maintains that the process is safe, critics have raised concerns about fracking fluid (a mix of water and chemical additives and propping agents such as sand) and the large amounts of resulting wastewater, which includes both flowback from the fracturing fluid and produced water from the deep formations. The latter brine is naturally occurring water, into which organic and inorganic constituents from the formation have dissolved. This, among other things, results in high concentrations of the ions barium, bromide, chloride, and strontium in the wastewater.

Some studies have documented localized instances of groundwater contamination related to fracking. For instance, a 2011 paper by Stephen G. Osborn, Avner Vengosh, Nathaniel R. Warner, and Robert B. Jackson, who were then at Duke, linked fracking to methane in groundwater in northeastern Pennsylvania and Upstate New York. There has been less evidence on surface-water contamination, other than due to isolated spills and leaks.

Bonetti, Leuz, and Michelon used a geocoded database that combined surface-water measurements with 46,479 hydraulic fracturing wells from 24 shales across 408 watersheds from 2006 to 2016. They specifically examined levels of barium, bromide, chloride, and strontium—ions usually found in high concentrations in flowback and produced water from wells. Because these ions do not biodegrade, and other studies have indicated that they can be found in surface waters seven years after spills of fracking fluids, they are useful markers that can be used to study the impact of fracking, according to the researchers.

Using a statistical approach, Bonetti, Leuz, and Michelon identified anomalous changes in ion concentrations associated with new wells in the same watersheds. The researchers found small but consistent increases in barium, chloride, and strontium concentrations for many watersheds across the US.

“While the elevated levels we discovered were well below maximum EPA and health advisory levels, it is important to recognize that the water measurements were predominantly taken from rivers, and that not all wells are close to surface water. Moreover, not all monitors in a watershed are in locations where they could detect an effect,” says Leuz.

He further notes that the study was hampered by the availability and measurement frequency of water-quality data. Hydraulic fracturing fluids contain potentially more dangerous substances, but Bonetti, Leuz, and Michelon weren’t able to analyze these chemicals, as they’re not widely covered by public databases.

Better and more frequent water measurement could improve understanding of the surface-water impact of unconventional oil and gas development, the researchers note. For instance, federal and state environmental agencies could consider placing monitoring stations in a more targeted way to improve tracking of changes in water quality.—Victoria Ekstrom High

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Facing health warning labels, companies tweaked their products

Obesity is a global epidemic, and the large amounts of calories, fat, sugar, and salt in fast foods and packaged products get much of the blame. In response, some countries, including the United States, mandate posting nutritional information on food packaging on the theory that it helps people make healthier choices.

Recent years have seen a new wave of food packaging reforms. One of the heaviest-handed such interventions is a 2016 Chilean law limiting TV advertising for offending foods. The measure also requires manufacturers to affix prominent black stop signs on the front of food packages warning that the contents are “high in sugar,” “high in saturated fats,” “high in salt,” or “high in calories.” The same or similar labels have since been adopted by many countries including Peru, Mexico, and Israel.

As intended, the warning labels suppressed demand for such foods, according to a study of breakfast cereals in Chile by Bar-Ilan University’s Jorge Alé-Chilet and Chicago Booth’s Sarah Moshary. But the labels affected both consumers and food manufacturers, which immediately started tweaking their product formulations to avoid the labeling requirements, the research finds.

Chile’s breakfast cereal purchases total $194 million a year, Alé-Chilet and Moshary note. Just before the law went into effect, about 13 percent of...
the cereals fell below the cutoff of 350 calories per 100 grams, which meant that the other 87 percent were required to post a high-calorie warning on their packaging, according to the study. Just after, 28 percent of the market squeaked under the cutoff, leaving 72 percent with the package warnings.

Analyzing data from Nielsen’s Global Snapshot on monthly product-level sales, hand-collected nutrition data from two stores, and data from Mintel’s Global New Products Database, the researchers demonstrate that volumes and prices for cereal overall held steady after the law went into effect. But the calorie content of cereal purchased fell 4 percent, or about 17 calories per 100 grams of cereal, and the amount of sugar dropped 1.5 grams per 100 grams of product.

The law, then, certainly made some breakfast cereal products healthier, yet reformulation might have kept consumers from choosing even healthier choices, the researchers point out.

“How, for example, that Kellogg’s reformulates Froot Loops to have 9g instead of 12g of sugar per serving,” they write. “If consumers who would otherwise have purchased Cheerios (9g sugar) switch to the new Froot Loops, the reformulation could increase sugar consumption. On the other hand, if consumers who would otherwise purchase Frosted Flakes (10g sugar) switch to Froot Loops, the reformulation could lower sugar consumption,” they write.

Modeling purchases before and after the law took effect, the researchers find that about half the calorie decline can be attributed to changing consumer tastes for breakfast cereals, and the balance is due to consumers switching to new and reformulated products.

“Our estimates suggest that reformulation was critical to achieving the observed reduction in the calorie content of cereal purchases,” Alé-Chilet and Moshary write. “These findings highlight the potential for supply-side forces to amplify government policy in the war on obesity.”

The researchers have one caveat for the policy’s success, however. Some manufacturers switched from sugar to artificial sweeteners in their reformulations, and it’s unclear how those ingredients affect consumers’ health. —Brian Wallheimer

**Why Do Some People See Things Faster Than Others?**

**How quickly** do you spot a car slamming on its brakes, a coffee cup tipping over, or a friend waving hello?

The widely held view that humans immediately notice what’s in front of them is undoubtedly wrong, according to Chicago Booth’s Alexander Todorov and a team of researchers, who find that recognizing visual stimuli is neither instantaneous nor universal. “The brain prioritizes information for consciousness,” the researchers write, but every brain prioritizes differently, which leads some of us to process visual stimuli more quickly than others. Citing the results of a series of 10 experiments they conducted involving dozens of Hebrew University students, they report that there are meaningful differences in how quickly people see something.

The “something” in the experiments involved words and other stimuli such as numbers, human faces, and emotional expressions. The team conducted the tests to determine nonconscious visual prioritization speed, or NVPS. Participants looked through 3D glasses at flashing stimuli and were asked to press a button to indicate whether the stimulus image was to the left or the right. The researchers also used “masks,” generally colorful or busy images, to obscure the stimuli. In some experiments, the masks were shown constantly in one eye while the stimuli slowly showed up in the other. In other experiments, the masks were flashed at both eyes between stimuli images. For example, in one test, some participants saw a colorful square in the right eye while a human face slowly showed up in the left eye. The participants indicated where and when the face appeared.

The researchers find no correlation between the speed at which people notice an object and similar cognitive traits such as perceptual threshold (the point at which some stimulus breaks through consciousness), visual short-term memory, attentiveness, and conscious cognitive speed. They do, however, find a moderate correlation between NVPS and self-reported sensitivity, the latter which they measured via a shortened checklist version of the highly sensitive person test, which included statements such as, “I am deeply moved by the arts or music” and “I notice and enjoy delicate or fine scents, tastes, sounds, and works of art.”

The researchers theorize that how quickly people process visual stimuli may affect how they experience the world. They also conjecture that those who quickly notice visual stimuli may be more aware of their surroundings—and be better able to reach out and keep that cup of coffee from tipping over. Those who take longer to process visual stimuli might crash into the braking car in front of them or only respond to a wave after the friend has turned away. However, those who react more quickly might also take less time to think and thus may make less deliberate decisions, the researchers suggest. —Kasandra Brabaw
WHY NETWORKING MATTERS MORE THAN EVER

There’s more at stake than your career

BY ROSE JACOBS
ILLUSTRATIONS BY MARTIN LEÓN BARRETO
Chicago Booth’s Ronald S. Burt was in London one morning in 2016 reading the *Times* when he was struck by an image in the newspaper. It was a map that showed where the recent Brexit vote, for the United Kingdom to leave the European Union, had been strongest. People in poorer regions had tended to vote “Leave,” while those in richer London, Manchester, and Edinburgh wanted to stay.

The image reminded him of another map, from a paper he often used in teaching, in which technology entrepreneur Nathan Eagle, Cornell’s Michael Macy, and British Telecom’s Rob Claxton had visualized the UK’s telephone networks, showing that people who called a greater range of phone numbers over the course of a month in 2005 tended to live in more prosperous regions. The volume of phone calls made no difference—it was the diversity of people being called that tracked economic indicators, and that those people were not in contact themselves: in other words, that Andrew had Betty and Calvin in his call list, but Betty and Calvin never phoned each other.

As a sociologist, Burt has demonstrated over decades that diverse networks of contacts help individuals thrive on a range of fronts—from salary levels and promotions to the chances of leading a successful start-up to the ability to think strategically. Your LinkedIn account is your fate.

The paper he shared with his classes was his own work scaled: quantitative evidence from a team of social and computer scientists suggesting that this relationship might persist at a community level. What Burt realized that morning is that the two maps—in the *Times* and from the research paper—suggested a less noted but potentially interesting relationship: between a person’s network diversity and their feelings about national borders. Your LinkedIn account is your country’s fate.
Remain in the EU

Strength of districts’ 2016 Brexit-vote majorities

Eagle, Macy, and Claxton’s network map of regional communication diversity and socioeconomic ranking in England


Brexit map data sources: Ythlev, UK Office for National Statistics; includes some UK Ordnance Survey mapping data ©the Crown.
The research by Eagle, Macy, and Claxton did not probe causality, but Burt says today that he can see the correspondence between open networks (ecosystems in which people can gather diverse contacts and ideas) and relative economic prowess—and associated views on cross-border or cross-cultural cooperation—as running in two directions. Individuals in struggling industries or regions may be where they are because they failed to network. But just as likely, if you can’t imagine that your life will be validated in new and unfamiliar settings, it will inhibit your temptation to network. “Around the world, there is this huge residue of people left behind,” Burt argues—left behind economically and socially. And this feeds into tribalism. “If there is no hope, you find solace in people like yourself.”

This jump between the Rolodex and politics may feel too big, but Burt is not the only person making it. Studies over the past several decades have focused on benefits to individuals and the economy of putting your head above the parapet: cross-fertilization promotes innovation and growth. Now a growing body of evidence from sociology, psychology, economics, and management goes further, suggesting that stepping out of our social bubbles is fundamental to social cohesion, and that networking—that exhaustion, cringe-worthy schmoozing so many of us were happy to drop in the name of COVID-19 social distancing—is a good way, maybe even the best way, of taking that step.

Open and closed networks

Networks are the patterns of people’s relationships with others, and how those others interact (or don’t) with one another. The world is full of clusters of networks, connected by one person here, another there. Here is an illustration of how they connect.

Robin and Jamie work together in one cluster.

Not your father’s networking

Isabelle Feng, a 31-year-old second-year consultant in San Francisco, started her previous career eight years ago at one of China’s biggest financial-news producers, where she was tasked with bringing domestic business stories to global audiences and international stories home. Building bridges was a way of operating in the world that felt natural to her—professionally and personally, as well as in that grey zone between the two. “I used to love to say to an acquaintance, ‘I know this person who does what you do; maybe I can connect you,’” she says.

This impulse was part of what drove Feng to earn her MBA in the United States, but it has been sapped by the COVID-19 pandemic. She landed her current position in summer 2020, and spent the first year and a half working from home. As a result, she doesn’t feel she has a firm grasp of the company’s culture, and wonders if her class of new hires will ever catch up or change the paradigm. Most of all, she can’t get excited about nurturing the network of loose contacts that once gave her such pleasure and purpose. “I know I have to relearn that,” Feng says late one night over Zoom. “I need to do it for my career. I need to do it for my life here, locally, too.”

Specialists in the science of networking agree. Network theory since the 1950s has demonstrated that the number and nature of our relationships with others can affect our behavior and success in the world. The importance of weak social links emerged in the research relatively soon after. In an influential 1973 paper that analyzed, among other situations, longtime Italian American residents in Boston’s West End struggling to hold gentrification at bay, Stanford sociologist Mark S. Granovetter argued that ideas are adapted more quickly when conveyed by people with many weak ties, as opposed to members of tightly knit groups, who tend to send information into cul-de-sacs. On this basis, Granovetter wrote, mobility in one’s career is better supported by weak than strong ties, and activism is least effective in communities partitioned by cliques.

In the 1990s, Burt completed this argument by looking not just at the ties between people, but the absence thereof—structural holes in the network, in his words. Burt described a network structure in which “brokers” use insider information from one in-group to solve problems or enhance life outside that setting. These connectors are not like the glad-handing networkers of the contemporary imagination in several senses. The benefits they get from this work are indirect—higher wages or better job opportunities thanks to their reputation for delivering fresh insights, rather than promotions arranged during rounds of golf with the boss.

More importantly, brokers are distinct from stereotypical, superficial networkers amassing weak ties every which way. Rather, brokers transfer knowledge from one setting to another that is built on long periods of in-group interactions, wherein experiences become so deeply shared among members that their lessons are often unspoken. The knowledge they’re moving is akin to what MIT’s Eric von Hippel has called “sticky” information, stickiness being the incremental expenditure required to transfer information in a way it can be used by a specific recipient. Sticky information can be tacit and difficult to explain to others—but
If COVID-19 and its aftermath deepen a relationship between having less status—due to age, gender, or race—and having little social capital, it is not just individuals who will suffer.

brokers do just that. Or if they do not explain it, they at least derive new lessons from it that are meaningful outside the insider group.

And they do so precisely by being part of the insider group. A 2016 analysis of investment bankers’ career paths and pay by Burt and Tulane’s Jennifer L. Merluzzi finds that individuals with broad networks of contacts earned no more than those in closed teams. The bankers with a significant pay advantage were those who oscillated between brokerage and “closure,” or in-group interactions. They worked intensely as an insider on one project for a period, and then spent time reconnecting with a wide range of colleagues before diving deep again.

“This is social capital,” says Burt, and he doubts the pandemic, or much else, will thwart those who have it. Those without are more vulnerable to hitting road blocks in their careers.

The network makes the networker
Chicago Booth’s Nicholas Epley forgot about the first interview scheduled for this article—for a good reason: he was taking his two youngest sons to the doctor. “People are motivated to connect with others,” he says. “But that motivation can be diminished, and the balance between close and more distant relationships can get disrupted.”

Some of Epley’s work explores just this relationship—between a person’s feeling of social connectedness with a close set (their children, say), and their interactions with others outside that circle (a writer they’ve never met).

In 2012, Northwestern’s Adam Waytz and Epley published a series of experiments in which they encouraged participants to think either about friends and family or about acquaintances and strangers, and then assessed them on measures such as the ability to recognize another person’s intentions. Waytz and Epley find that the people who felt socially connected were more likely to dehumanize strangers than were subjects unmoored from their close social relationships. “People who are full . . . are less likely to look for food. Similarly, people who feel socially connected are less motivated to affiliate with others,” they write. “Considering others’ interests, attitudes, feelings, and preferences are critical for connecting with them. Diminishing the motivation to connect with others may diminish the motivation to recognize, think about, or consider others’ mental states as well.”
This chimes with research suggesting that events that reduce the number or intensity of a person’s close relationships have a positive impact on prosocial behavior. A 2010 study by Oxford’s John Ermisch and Diego Gambetta established that events that force people out of their tight family circles, such as divorce, make those people more likely to trust strangers. A 2020 study of Vietnamese villagers who moved away from their hometowns and returned, by Kochi University of Technology’s Yoshinori Nakagawa and then–Kochi PhD student Huyen Thi Le, demonstrates that these returned immigrants were more likely than the average villager to put energy into the community at large, and more likely to try to improve life there for future generations.

Burt and his fellow researchers have also tried to work out how people’s networks affect their behavior. Burt and Jar-Der Luo at Tsinghua University noted in 2019 that people with closed professional networks were more likely than those with open networks to blame work problems on a colleague’s character, as opposed to skills, or outside circumstances.

And in August 2021, Burt, alongside Sonja Opper at Bocconi University and Håkan J. Holm at Lund University, published a study probing the degree to which having a closed network predicts a person’s willingness and ability to cooperate with people outside of the network. They interviewed 500 CEOs of Chinese companies, conducting an analysis of their professional networks and asking them to take part in prisoner’s dilemma games in which the executives had to balance the risks and rewards of cooperating with versus defecting against a stranger in a financial or business transaction. CEOs with closed networks turned out to be much less predisposed to cooperation.

Strikingly, this effect and its inverse, in which CEOs with open networks were more likely to cooperate, increased if the given CEO’s company was more successful than average, as measured by the previous year’s profits. Successful people find justifications for their success, and their networks, whether open or closed, will be “baked into that rationalization,” write the researchers. This makes successful executives more likely than less successful executives to be influenced by their networks in their future behavior.

The success effect also underscores the likelihood that the impulse to cooperate is learned and not merely an underlying personality trait: CEOs who are trusting by nature could be expected to cooperate no matter what their network structure, and the researchers assume that the distribution of naturally trusting CEOs is consistent whether or not they are successful. But the finding that successful CEOs cooperated more than unsuccessful CEOs suggests they learned something from their success—namely, that cooperation worked for them.
A rut or a grave?
How long does your network need to be in place before it starts affecting your actions in the world? In the CEO study, the researchers looked at their subjects’ networks going back in time. When they labeled an executive’s network as “open” or “closed” on the basis of the person’s most recent contacts, the network did not predict whether the CEO cooperated in the prisoner’s dilemma game, whereas longer-established networks did. Burt infers from the data that “a respondent’s pattern of network behavior for two or three years is a good indicator of the respondent’s behavioral predisposition in a game played today.”

This suggests the structures we settled into under COVID-19 are unlikely to change us in the long run. Epley also believes we will bounce quickly back to our old ways of connecting, should most workplaces return to on-site work as the norm. (For more on the work-from-home trend, see “How should organizations manage hybrid work?” on page 54.)

Isabelle Feng, struggling to absorb tacit insider information at her new job, is not so sure this will be overcome easily once in the office. “In some ways, there are good things about COVID-19 and work,” she says. “You can feel that everyone has become more empathetic and less aggressive. You tend to care about people more and understand that there are many critical elements and priorities in life other than work. If I were in a video meeting with someone and I saw their kid walk into the room asking for help, even if there was something I wanted to say, I’d think, ‘Never mind, you’ve got more important things in life to take care of right now. I’m not going to keep you.’”

Some surveys suggest that, beyond the pandemic, a two-tier system could develop in the workplace, with more-experienced and higher-status workers continuing to work flexibly even if younger workers return to the office. A February survey from Eden Workplace, an office-management software company, indicates that, in the US, baby boomers tend to be less eager to return to in-person work than millennials, and white workers tend to be less willing to go back than nonwhite workers.

Under this scenario, individuals with social capital will retain it: a more-closed network for a year or two midcareer shouldn’t affect anyone’s ability to oscillate between closed and open networks. But those less-experienced workers who haven’t done this oscillation before may struggle to find that rhythm. And their access to other closed networks—those of more powerful coworkers or at better jobs—might be limited.

This could exacerbate inequality, according to New York University’s Delia Baldassarri and Maria Abascal. They argue in a 2020 review article in Science that the office is an ideal setting in which different groups interact harmoniously, writing that the key to social cohesion in diverse communities is twofold: economic interdependence between subgroups (hiring a person, selling them a service, renting them a home), and social differentiation, in which people recognize multiple identities in themselves and others rather than categorizing only by race, class, religion, or nationality. But, they add, social differentiation must also come with policies that pull apart the coiled rope of identity and opportunity, such that being Black does not increase your likelihood of landing in prison, for example, and being working class is not associated with limited access to higher education. To this extent, if COVID-19 and its aftermath deepen a relationship between having less status—due to age, gender, or race—and having little social capital, it is not just individuals who will suffer.

Only connect
MBA students are among the most eager of networkers in the traditional sense; they are also, in Burt’s experience, interested in learning to network better by becoming “brokers.” Might they thereby become soldiers for social cohesion?

In fall of last year, 26-year-old Shaurya Jha moved from his native India to the US to start a business degree and, recognizing that his class’s experience would be fundamentally different from others’, founded the LinkedIn group “US MBA Admits 2020 (Opportunity in Adversity).” It soon had nearly 400 members, but Jha noticed that the online community wasn’t exactly serving as a classic networking tool—as a wide web of weak contacts. Its posts about COVID-19 and higher education or COVID-19 and recruiting got little interaction from the nearly 400 members, and few conversations lasted more than a comment or two. Instead, the group became a place where people could go to find their smaller clique, whether that meant self-selecting by university, visa issue, or target internship. “People were interacting intensely in these groups, discussing their own specific situations,” says Jha.

The members, in other words, were networking in the same pattern used by the most successful investment bankers: by building bridges through casual contacts, then going deep by forming strong relationships. The next round of bridge building may happen in person, and the postpandemic reopening, even if its pace is halting, should with any luck support the creation of these types of bonds for people with an impulse and motivation to connect.

However, the coronavirus exposed tears in the social fabric that may be hard to repair. People are divided over mask-wearing, reopening schools, and trusting in vaccines. The challenge to social cohesion lies in giving people reason to connect outside their cliques. Those for whom Burt’s form of networking has worked in the past should at least understand the benefits to them as individuals; the danger is that they feel they have benefited enough and don’t need to do any more of the sometimes-uncomfortable work of interacting with people unlike themselves.

Those with little in the way of wealth or education, meanwhile, might be shy of encounters outside their bubbles. If they don’t have much status across social groups, this can make networking a demoralizing experience.

“To the extent that money is the criterion for dignity, they’re in a hopeless position,” Burt worries. As is society, balkanized between the haves and have-nots. “But to the extent there is respect and visibility for being interesting, being a little varied, there is hope for everybody,” he says.——

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How first impressions work against women
Our automatic assumptions are laden with gender bias

BY KASANDRA BRABAW
any entrepreneurs, particularly female ones, have horror stories about their pitch sessions with potential investors. Chicago Booth’s Waverly Deutsch recalls when two female cofounders were promoting their idea of a consumer marketplace business and the potential investor asked if they were a couple—and indicated he would be more interested in the company if they were. “Another huge problem is women building companies that serve women and being told, ‘Oh, I don’t know anything about that market, so I can’t invest in it,’ or ‘Why are you ruling out men as a market?’ or ‘I asked my wife about your business, and she wasn’t excited,’” says Deutsch, who has interviewed scores of entrepreneurs and written about their challenges in several columns for Chicago Booth Review. From the moment women arrive to introduce their ideas, forces seem to be working against them and undermining their credibility.

Booth’s Alexander Todorov has documented the deep biases that shape those first impressions. In a series of research projects, he has found that even before people open their mouths, their faces prompt automatic judgments and impressions laden with gender stereotypes. In three studies, Todorov and his collaborators adjusted the masculinity and femininity of both men’s and women’s faces and tested how people judge those faces on traits including dominance, competency, trustworthiness, and attractiveness. All of the findings suggest that we make quick assumptions steeped in biases. These snap judgments are formed with superficial cues, Todorov says, often painting a false picture of the person. In the process, all of us tend to overestimate some people and underestimate others, often women.

Addressing these biases could have a powerful economic impact. Supporting more women entrepreneurs would boost the global economy by nearly $5 trillion, according to the Boston Consulting Group. If there were a more equal distribution of men and women running businesses, global GDP would rise by about 3–6 percent, BCG suggests.

First impressions are not the only cause of inequality in investment, but Deutsch has seen their effect many times working with entrepreneurs. She has written about how knowing gender sets an investor up to ask different questions. (For more, read “What venture capitalists can learn from racist rats,” in the Winter 2017/18 issue and online at Review.ChicagoBooth.edu.) And how investors react to facial expressions, tone of voice, and inflection, particularly in the first five seconds of a pitch. (Read “Entrepreneurs, remember the power of a smile,” Spring 2021 and online.) Todorov’s research suggests the impact of such initial impressions is widespread.

Is she dominant?
When Susan Boyle first took the stage at Britain’s Got Talent in 2009 and confidently announced her desire to become a famous, professional singer, she was met with eye rolls, side-eyes, and smirks from the judges and audience alike. No one expected the 47-year-old woman with a protruding brow bone, double chin, and frumpy dress to have a beautiful voice. But Boyle shocked the audience (and later the world) when she sang a rendition of “I Dreamed A Dream” from the musical Les Misérables.

Social cues—including her age, quirkiness, and low socioeconomic class—played a role in viewers’ gut reaction to her, but research suggests that her more stereotypically masculine facial features may also have led people to underestimate her.

A study by DongWon Oh, Ron Dotsch, Jenny Porter, and Todorov—conducted when all were at Princeton—examined how dominant facial characteristics shape people’s impressions of women compared with men. Across three experiments, the researchers find that people use the same visual information when assessing traits such as trustworthiness and dominance from both men and women’s faces, but they evaluate that information differently on the basis of gender.

The researchers asked study participants to rate different sets of female and male faces—all white in some experiments, and a mix of different races in others—on traits including aggression,
confiden...c, trustworthiness, intelligence, and caring. These experiments established that people, regardless of their own gender, use the same visual cues to judge both male and female faces. Boyle’s large brow bone and strong jaw, for example, lend her a more masculine appearance, which the research suggests would lead people to assume she has more masculine character traits.

In further experiments, the researchers used the earlier results to manipulate male and female faces to look more or less trustworthy and dominant, and then asked survey takers to rate those faces along those traits. Participants were always told to rely on their “gut feeling” when rating each face.

Overall, the findings provide evidence for the backlash effect, an established phenomenon in which women who defy expected stereotypes of femininity experience social or economic penalties. Results of the experiments reveal a difference in how perceived masculinity and femininity affected participants’ impressions of men and women. Women who were deemed to have more masculine traits and features were evaluated more negatively than men deemed to have feminine features. In short, women whose appearance defied expectations were judged more harshly than men whose appearance defied expectation.

For women, looking different than people expect tends to garner negative judgment, as played out when Susan Boyle stepped on stage. Boyle, who made people think twice about those stereotypes, finished second in her season of Britain’s Got Talent and ultimately realized her ambition of becoming a professional singer. After signing to the label run by show host Simon Cowell, she released eight albums and, as of February 2021, had reportedly sold 19 million records.

**Is she competent?**

Women perceived as too masculine can be judged harshly, and yet some masculinity broadcasts confidence.

Fashion illustrates this through the shoulder pad. It was a key part of 1980s power dressing, in which women office workers dressed more like their male colleagues. “Shoulder pads add to an authoritative appearance, which can be incredibly useful for women,” says University of Nevada, Las Vegas’s Deirdre Clemente, who specializes in the history of clothing and fashion.

The goal of shoulder pads was to make women look bigger, broader, more competent. Although they may not have had the science to back it up, women understood that if they wanted to work with and be taken seriously by men, they had to look at least a little more masculine.

Facial features play a part in how competent we assume people to be, especially when we have no other information to go on. A study from Oh, now a postdoctoral scholar at New York University, Princeton’s Elinor Buck, and Todorov looked at what the researchers call “the visual ingredients of the competence stereotype.” Facial features play a part in how competent we assume people to be, especially when we have no other information to go on. Over four experiments, Oh, Buck, and Todorov identified three main components of competence impressions: attractiveness, confidence, and masculinity.

In some experiments, the researchers asked online survey takers to rate faces on the basis of how competent or how attractive they thought the person to be. In others, they asked participants to rate faces as either male or female on the basis of confidence and masculinity. The faces were computer generated and had no markers, such as hair or clothing, to indicate gender. In a final experiment, the researchers used photorealistic faces made to look more true to life than the previous images. They showed survey takers faces of one gender (with the markers included this time) and asked them to judge how competent the faces seemed to be. Again, each participant was told to rely on gut instinct.

Taken together, the studies find that the most competent-looking faces were those that were perceived as more confident and masculine. In the experiments in which the gender of each face was not specified, raters tended to categorize the faces they deemed competent as male rather than female.

Although perceived attractiveness plays a part in whether or not people judge someone competent, and feminine facial features are typically considered more attractive on both women and men, the researchers find that perceived masculinity is an important and strong component as well. This may explain the shoulder-pad trend when bias against women was more explicitly rampant in workplaces. The fundamental purpose of shoulder pads is to distort the body, Clemente says. “Shoulder pads were part of a broader aesthetic change, and a lot of this was to give this power and authority and to make somebody’s body look larger and more powerful than it actually was,” she says. Women did what they could to make themselves look more masculine, knowing at least subconsciously that a masculine appearance mattered. Shoulder pads, Clemente says, are again becoming popular.

However, Todorov and his colleagues note that there’s a fine line, as is demonstrated with the backlash effect. Some masculinity may help women be judged as more competent. Yet too much masculinity can lead to discrimination.

**The double standard**

Gender stereotypes can affect men, too, but often in a positive way. When women such as Susan Boyle display masculine traits, they tend to be judged negatively for it when men who display feminine traits are not. Indeed, in the experiments by Oh, Buck, and Todorov, when men displayed masculine traits, they were assumed to be more competent. It can even work to their advantage.

In the realm of snap judgments, one thing people quickly size up is attractiveness, a quality that carries weight both socially and
Facial manipulation helps researchers uncover first-impression biases

To study snap judgments and uncover issues such as gender bias, researchers may show people a series of faces—and in many cases, those images are computer generated and carefully manipulated.

Chicago Booth’s Alexander Todorov might give a slight smile to a neutral face or increase the distance between someone’s eyebrows and eyes to study what features are considered, say, friendly or trustworthy. But how slight should the smile be? Or how much space should be added under an eyebrow? There could be millions of variations, if not more. To address this, Dartmouth postdoctoral scholar Nikolaas N. Oosterhof and Todorov developed computational, data-driven models of social judgments of faces. They have used their models to create a number of databases that they make available to other researchers.

Their work in this area builds on that of Volker Blanz and Thomas Vetter, both of the Max Planck Institute for Biological Cybernetics in Germany. Blanz and Vetter created a way to essentially represent each face as a set of numbers. Any face can map onto this “face space.”

Oosterhof and Todorov, in turn, randomly generated sample faces and asked study participants to rate those faces on a particular characteristic, such as trustworthiness. Using these ratings, they could model the specific social judgment (trustworthiness) as a function of the variation in face shape and face “reflectance,” which they define as the brightness, texture, and color variation of a face.

The researchers are careful to point out that this isn’t universally true. Some straight women may prefer more masculine personalities and therefore be more attracted to masculine faces. Generally the straight women who participated in the study preferred the faces they deemed warmer, more nurturing, and gentler, but how attractive you find someone is highly personal.

Their research reduces differences in faces to 100 principal components (PCs)—50 for face shape and 50 for reflectance. Each PC is responsible for increasingly smaller variations. For example, when it comes to face shape, PC1 defines the overall width of a face and all of its features. PC2 relates to the elongation of the face. Lower PCs change the face shape in broad sweeps, higher ones in subtler ways.

A similar 50-dimensional model represents differences in face reflectance, which Todorov says is just as important to our perception of a person as face shape. PC1 again has the greatest effect, determining the overall lightness or darkness of a face.

The cumulative statistical model can be used to essentially map any face along its coordinates. The researchers can also adjust PCs to slightly tweak a face’s appearance. Their approach allows them to generate an infinite number of faces and parametrically manipulate them according to the social judgment they’re evaluating.

Oosterhof and Todorov, as well as Todorov and New York University postdoctoral scholar DongWon Oh, have used these frameworks of social judgments of faces to generate and validate many databases that serve as models of perceived trustworthiness, dominance, attractiveness, competence, extraversion, likability, and more. As of April 2020, more than 4,380 researchers had downloaded these face databases.

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

professionally. People expect someone who is attractive to do well not just on dates but in the workplace and life more generally. A host of studies and models of facial impressions, dating back decades, supports the idea that someone considered attractive is perceived to be more competent and to have a higher social status. And according to a study from Oh, Columbia’s Natalie Grant-Villegas, and Todorov, men with more feminine facial features are considered particularly attractive.

The study explored how facial femininity and masculinity correlated with perceived character traits. The researchers asked two sets of heterosexual women to rate a set of white male faces on six stereotypically masculine and feminine personality traits: warmth, nurturance, gentleness, dominance, confidence, and competitiveness. Overall, the women indicated that men with some feminine facial features, including large eyes and a softer jawline, were warmer, more nurturing, and gentler.

After rating faces on personality traits, both sets of women were asked to rate 75 male faces on attractiveness. The faces were manipulated to look more or less masculine. In both studies, straight women more often rated the more feminine faces as attractive.

There’s also no rule of nature that says a man who looks masculine isn’t also gentle and nurturing. Such perceived character traits are steeped in gendered stereotypes.

That said, overall, stereotypes seem to help men either way. If they’re masculine, they’re considered competent. If they’re feminine, they’re attractive—likely loving, caring partners or good-looking people who will do well in life. Yet women are doubly hurt by snap judgments—too feminine to be taken seriously, until they’re judged to look so masculine they trigger the backlash effect.

Is there anything to do?
Knowing that we’re prone to often incorrect and biased impressions isn’t enough to keep them from happening. “It’s difficult to restrain from engaging in snap judgments,” Todorov says. “They are fairly automatic, but superficial.”

People can judge another person’s face after seeing it for only 100 milliseconds; he finds in a study run with Janine Willis, a Princeton student at the time and now a corporate counselor. That’s 0.1 seconds that our brains take to process a face and make a choice about whether that person is trustworthy, attractive, or dominant.

Willis and Todorov showed 117 undergraduates photos of faces for three different time periods: one-tenth of a second, half a second, and 1 second. In one experiment, participants were asked to rate the faces on trustworthiness, with each subsequent experiment testing a different characteristic: attractiveness, likability, competence, and aggressiveness.
The participants did not need the extra time: the judgments they made about each face were not significantly different when they were given longer. This suggests that our appearance-based judgments are immediate and difficult to change, the researchers conclude. “The best course of action is to have access to good quality information and make sure that this information dominates your decision,” Todorov says.

He gives the example of symphony orchestras. For decades, large symphony orchestras in the United States consisted almost entirely of white men, and their conductors largely controlled the hiring process. Recognizing the process needed to be fairer and more open, many of the biggest orchestras in the country adopted blind auditions in the 1970s and ‘80s. From then on, a musician’s interview process included playing a piece for a group of judges behind a screen, so the judges did not know the performer’s gender or race. The new procedure worked well for women. In 2000, Harvard’s Claudia Goldin and Princeton’s Cecilia Rouse examined the impact of blind auditions, finding that a blind process increased the probability that a woman musician would advance to the next audition stage and had an even bigger impact on the likelihood that she would be hired.

Some argue that blind auditions haven’t gone far enough, but Todorov notes they have successfully countered faulty first impressions. “One of the implications of my research is that to overcome biases, you would need to avoid presenting any cues triggering the bias,” says Todorov. Cues can include even the click of high heels as the person wearing them walks across a stage.

The same idea can be applied to other situations, even start-up investing. If investors were to narrow the pool of ideas without first seeing the faces of the people at the helm, women could potentially get a greater share of venture capital.

Deutsch wrote in CBR about VC firms that are using artificial-intelligence engines to help them vet and guide investments. Connetic Ventures is one such firm, and using A.I., it produced a diverse portfolio, with just over a third of companies led by female CEOs. (Read “Women and minority investors are taking matters into their own hands,” Summer 2021 issue.) Seemingly objective criteria may not eliminate bias entirely, and A.I. can develop its own biases by finding variables that correlate to gender. But in this case, Todorov notes, automating the process would seem to have helped remove the influence of snap judgments. That allows investors to react to ideas, not facial features.—CBR

Some argue that blind auditions haven’t gone far enough, but Todorov notes they have successfully countered faulty first impressions.
Team meetings are where the magic happens—or where it doesn’t. It helps to have the right people in the room, and the right processes in place. But there are other factors that contribute to the dynamic that can make all the difference.

In this minicourse, Lisa Stefanac, '09, clinical associate professor of leadership, untangles the roles, languages, and systems at play in the conference room, so that you can learn to “read the room” and increase your ability to use communication cues to improve outcomes.

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ChicagoBooth.edu/TeamDynamics
An acquaintance recently wrote to me about her daughter, Olivia. Olivia is a 29-year-old diabetic woman on the autism spectrum. These days, she regularly walks a 2-mile trek through her small, rural community in the western United States. But only a few years ago, she hardly walked at all. She doesn’t drive, so she would walk to the grocery store or to restaurants near her house if no one was around to drive her, but otherwise she found walking boring and preferred to stay home. Then she downloaded Pokémon GO.

Growing up in the late 1990s, Olivia was a big Pokémon fan. So when Pokémon GO came out in 2016, she was excited to start playing again.

The game uses your phone’s GPS and clock to detect where and when you’re in the game and make Pokémon characters “appear” around you so you can go and catch them. Soon after downloading the game, Olivia started taking her 2-mile walks. That route was the best for catching Pokémon. The game gave her a reason to go out and walk—this was the Pokémon journey she’d dreamed of going on since she was 10 years old.

Olivia’s isn’t the only story I’ve heard about Pokémon GO motivating more exercise. In fact, the game was a big reason my eight-year-old son and I started taking walks around our neighborhood, and it was so wildly

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Gamify your life

Want to achieve your goals? Have fun on the way

A

YELET FISHBACH

ILLUSTRATION BY MICHAEL BYERS
There are three ways to make a boring or difficult activity more intrinsically motivating. First, we have the aptly named “make-it-fun” strategy, which as you might guess involves making an activity fun. The make-it-fun strategy actively associates immediate incentives (i.e., minigoals) with pursuing the activity. These incentives harness our need for instant gratification and thereby make a previously dull activity more exciting, letting us experience it as its own end. For example, when Cornell’s Kaitlin Woolley and I (to the chagrin of some teachers) encouraged high-school math students to listen to music, eat snacks, and use brightly colored pens while doing their math assignment, we found that the students worked longer. Doing math was fun because it delivered immediate auditory, taste, and visual benefits. Catching a Pokémon is also an immediate incentive for Pokémon GO players.

People frequently apply this principle to make it fun when they bundle goals with temptations. Associating completing a workout with watching TV or working on a school assignment with listening to music is what’s known as temptation bundling. This strategy is particularly effective if you limit yourself to engaging in the tempting activity only while pursuing the goal. So, for example, you only let yourself eat a square of chocolate while answering your many work emails. Incorporating these temptations increases intrinsic motivation to pursue your goals. It’s critical, however, that the rewards are immediate. Adding a delayed reward, such as earning five squares of chocolate by the end of the workweek, won’t work.

The second strategy in the motivation-science tool kit is to find a fun path. When you set a goal and have to think about the path you’ll take to get there, factor in immediate enjoyment. For example, people who want to exercise more should consider finding workouts that sound fun. Rather than slogging away on a bike at the gym, try a spin class that uses upbeat music to keep you engaged. For people who like metal, some New York City spin studios offer “Death Cycle” classes in which instructors blast metal music while everyone works out. This is an effective strategy. As Woolley and I found in a study, gym goers who chose a weight-lifting exercise they enjoyed completed about 50 percent more repetitions than those who chose an exercise they thought would be most effective. Of course, you do still have to choose an activity that will ultimately help you accomplish your goal. If you’re exercising to get fit, low-impact yoga probably won’t help much. But when you have a set of activities that will accomplish the same goal, try to choose the one you’ll find most fun.

The third strategy is to notice the fun that already exists. If you focus on the immediate rather than delayed benefits for pursuing an activity, you’ll likely feel more intrinsically motivated and therefore be more likely to keep at it. Imagine you want to eat more carrots. If you focus on what you like about eating carrots—they’re crunchy, sweet, and a little earthy—rather than the fact that carrots are a healthy snack or the idea that they might improve your eyesight, you’ll be more likely to eat them. This is just what Woolley and I found in a study when we had people choose between two identical bags of baby carrots. We asked some people to choose the tastier-looking bag and some the healthier-looking bag. People ate almost 50 percent more when asked to choose the bag of carrots that looked tastier. Simply directing your attention to the immediate positive experience—to the extent that it exists—when making a choice will help you stick to your goals. —CBR

Ayelet Fishbach is the Jeffrey Breakenridge Keller Professor of Behavioral Science and Marketing and an IBM Corporation Faculty Scholar at Chicago Booth. Excerpted from GET IT DONE, reprinted by arrangement with Little, Brown Spark, a division of Hachette Book Group. Copyright © Ayelet Fishbach

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What makes it hard to control inflation

Monetary policy lives in the shadow of US federal debt

Today’s inflation is transitory, our central bankers assure us. It will go away on its own. But what if it does not? Central banks will have “the tools” to deal with inflation, they tell us. But just what are those tools? Do central banks have the will to use them, and will governments allow them to do so?

Should inflation continue to surge, central banks’ main tool is to raise interest rates sharply, and keep them high for several years, even if that causes a painful recession, as it did in the early 1980s in the United States, United Kingdom, and much of Europe. How much pain, and how deep of a dip, does it take to stop inflation and to keep inflation in check? The well-respected Taylor rule (named after my Hoover Institution colleague John B. Taylor) recommends that interest rates rise one-and-a-half times as much as inflation. So if inflation rises from 2 percent to 5 percent, interest rates should rise by 4.5 percentage points. Add a baseline of 2 percent for the inflation target and 1 percent for the long-run real rate of interest, and the rule recommends a central-bank rate of 7.5 percent. If inflation accelerates further before central banks act, reining it in could require the 15 percent interest rates of the early 1980s.

Would central banks do that? If they did, would high interest rates control inflation in today’s economy? There are many reasons for worry.

The shadow of debt

Monetary policy lives in the shadow of debt. US federal debt held by the public was about 25 percent of GDP in 1980, when Federal Reserve chair Paul Volcker started raising rates to tame inflation. Now, it is 100 percent of GDP and rising quickly, with no end in sight. When the Fed raises interest rates 1 percentage point, it raises the interest costs on debt by 1 percentage point, and, at 100 percent debt to GDP, 1 percent of GDP is about $227 billion. A 7.5 percent interest rate therefore creates interest costs of 7.5 percent of GDP, or $1.7 trillion.

Where will those trillions of dollars come from? Congress could drastically cut spending or find ways to increase tax revenues. Alternatively, the US Treasury could try to borrow additional trillions. But for that option to work, bond buyers must be convinced that a future Congress will cut spending or raise tax revenues by the same trillions of dollars, plus interest. Even if investors seem confident at the moment, we cannot assume that they will remain so indefinitely, especially if additional borrowing serves only to pay higher interest on existing debt. Even for the United States, there is a point at which bond investors see the end coming and demand even higher interest rates as a risk premium, thereby raising debt costs even more, in a spiral that leads to a debt crisis or to a sharp and uncontrollable surge of inflation. If the US government could borrow arbitrary amounts and never worry about repayment, it could send its citizens checks forever and nobody would have to work or pay taxes again. Alas, we do not live in that fanciful world.

In sum, for higher interest rates to reduce inflation, they must be accompanied by credible and persistent fiscal tightening, now or later. If the fiscal tightening does not come, higher interest rates will eventually fail to contain inflation.

This is a perfectly standard proposition, though it is often overlooked when discussing the US and Europe. It is embodied in the models used by the US Fed and other central banks. It was standard International Monetary Fund advice for decades.
Successful inflation and currency stabilization almost always includes monetary and fiscal reform, and usually microeconomic reform. The role of fiscal and microeconomic reform is to generate sustainably higher tax revenues by boosting economic growth and broadening the tax base, rather than with sharply higher and growth-reducing marginal tax rates. Many attempts at monetary stabilization have fallen apart because the fiscal or microeconomic reforms failed. Latin American economic history is full of such episodes.

Even the US experience in the 1980s conforms to this pattern. The high interest rates of the early ’80s raised interest costs on the US national debt, contributing to most of the “Reagan deficits,” which seemed large at the time. Even after inflation declined, interest rates remained high, arguably because markets were worried that inflation would come surging back.

So why did the US inflation-stabilization effort succeed in the 1980s, after failing twice before in the ’70s, and countless times in other countries? In addition to the Fed remaining steadfast and the Reagan administration supporting it through two bruising recessions, the US undertook a series of important tax- and microeconomic-policy changes, most notably the 1982 and 1986 tax reforms, which sharply lowered marginal rates, as well as market-oriented regulatory reforms starting with the Carter-era deregulation of trucking, air transport, and finance.

The US experienced a two-decade economic boom. A larger GDP boosted tax revenues, enabling debt repayment despite high real-interest rates. By the late 1990s, strange as it sounds now, economists were actually worrying about how financial markets would work once all US Treasury debt had been paid off. The boom was arguably a result of these monetary, fiscal, and microeconomic reforms, though we do not need to argue the cause and effect of this history. Even if the economic boom that produced fiscal surpluses was coincidental with tax and regulatory reform, the fact remains that the US government successfully paid off its debt, including debt incurred from the high interest costs of the early 1980s. Had it not done so, inflation would have returned.

The borrower ducks
But would that kind of successful stabilization happen now, with the US national debt four times larger and still rising, and with interest costs for a given level of interest rates four times larger than the contentious Reagan deficits? Would Congress really abandon its ambitious spending plans, or raise tax revenues by trillions, all to pay a windfall of interest payments to largely wealthy and foreign bondholders?

Arguably, it would not. If interest costs on the debt were to spiral upward, Congress would likely demand a reversal of the high interest-rate policy. The last time the US debt-to-GDP ratio was 100 percent, at the end of World War II, the Fed was explicitly instructed to hold down interest costs on US debt, until inflation erupted in the 1950s.

The unraveling can be slow or fast. It takes time for higher interest rates to raise interest costs, as debt is rolled over. The government can borrow as long as people believe that the fiscal reckoning will come in the future. But when people lose that faith, things can unravel quickly and unpredictably.

Will and politics
Fiscal-policy constraints are only the beginning of the Fed’s difficulties. Will the Fed act promptly, before inflation gets out of control? Or will it continue to treat every increase of inflation as “transitory,” to be blamed on whichever price is going up most that month, as it did in the early 1970s?

It is never easy for the Fed to cause a recession, and to stick with its policy through the pain. Nor is it easy for an administration to support the central bank through that kind of long fight. But tolerating a lasting rise in unemployment—concentrated as usual among the disadvantaged—seems especially difficult in today’s political climate, with the Fed loudly pursuing solutions to inequality and inequity in its interpretation of its mandate to pursue “maximum employment.”

Moreover, the ensuing recession would likely be more severe. Inflation can be stabilized with little recession if people really believe the policy will be seen through. But if they think it is a fleeting attempt that may be reversed, the associated downturn will be worse.

One might think this debate can be postponed until we see if inflation really is transitory or not. But the issue matters now. Fighting inflation is much easier if inflation expectations do not rise. Our central banks insist that inflation would have returned.
expectations are “anchored.” But by what mechanism? Well, by the faith that those same central banks would, if necessary, reapply the harsh Volcker medicine of the 1980s to contain inflation. How long will that faith last? When does the anchor become a sail?

A military or foreign-policy analogy is helpful. Fighting inflation is like deterring an enemy. If you just say you have “the tools,” that’s not very scary. If you tell the enemy what the tools are, show that they all are in shiny working order, and demonstrate that you have the will to use them no matter the pain inflicted on yourself, deterrence is much more likely.

Yet the Fed has been remarkably silent on just what the “tools” are, and just how ready it is to deploy them, no matter how painful doing so may be. There has been no parading of matériel. The Fed continues to follow the opposite strategy: a determined effort to stimulate the economy and to raise inflation and inflation expectations by promising no-matter-what stimulus. The Fed is still trying to deter deflation and says it will let inflation run above target for a while in an attempt to reduce unemployment, as it did in the 1970s.

It has also precommitted not to raise interest rates for a fixed period of time, rather than for as long as requisite economic conditions remain, which has the same counterproductive result as announcing military withdrawals on specific dates. Like much of the US government, the Fed is consumed with race, inequality, and climate change, and thus is distracted from deterring its traditional enemies.

**Buy some insurance!**

An amazing opportunity to avoid this conundrum beckons, but it won’t beckon forever. The US government is like a homeowner who steps outside, smells smoke, and is greeted by a salesman offering fire insurance. So far, the government has declined the offer because it doesn’t want to pay the premium. There is still time to reconsider that choice.

Higher interest rates raise interest costs only because the US has financed its debts largely by rolling over short-term debt, rather than by issuing long-term bonds. The Fed has compounded this problem by buying up large quantities of long-term debt and issuing overnight debt—reserves—in return.

The US government is like any homeowner in this regard. It can choose the adjustable-rate mortgage, which offers a low initial rate but will lead to sharply

**Two percentage points is the insurance premium for eliminating the chance of a debt crisis for 30 years, and for making sure the Fed can fight inflation if it needs to do so. I am not alone in thinking that this seems like inexpensive insurance.**

higher payments if interest rates rise. Or it can choose the 30-year (or longer) fixed-rate mortgage, which requires a larger initial rate but offers 30 years of protection against interest-rate increases.

Right now, the one-year Treasury rate is 0.07 percent, the 10-year rate is 1.3 percent, and the 30-year rate is 1.9 percent. Each one-year bond saves the US government about 2 percentage points of interest cost as long as rates stay where they are. But 2 percent is still negative in real terms. Two percentage points is the insurance premium for eliminating the chance of a debt crisis for 30 years, and for making sure the Fed can fight inflation if it needs to do so. I am not alone in thinking that this seems like inexpensive insurance. Even former US secretary of the treasury Lawrence H. Summers has changed his previous view to argue that the US should move swiftly to long-term debt.

But it’s a limited-time opportunity. Countries that start to encounter debt problems generally face higher long-term interest rates, which forces them to borrow in the short run and expose themselves to the attendant dangers. When the house down the street is on fire, the insurance salesman disappears, or charges an exorbitant rate.

**Bottom line**

Will the current inflation surge turn out to be transitory, or will it continue? The answer depends on our central banks and our governments. If people believe that fiscal and monetary authorities are ready to do what it takes to contain breakthrough inflation, inflation will remain subdued.

Doing what it takes means joint monetary and fiscal stabilization, with growth-oriented microeconomic reforms. It means sticking to those policies through the inevitable political and economic pain. And it means postponing or abandoning grand plans that depend on the exact opposite policies.

If people and markets lose faith that governments will respond to inflation with such policies in the future, inflation will erupt now. And in the shadow of debt and slow economic growth, central banks cannot control inflation on their own.

John H. Cochrane is a senior fellow of the Hoover Institution at Stanford University and was previously a professor of finance at Chicago Booth. This essay first appeared on Project Syndicate and his blog, The Grumpy Economist.
Why societies need to invest in their people

The social contract has broken down in capitalist countries. Can capitalism continue to offer opportunities?

This is an edited excerpt of the conversation held September 30 in London at a Future of Capitalism event sponsored by Chicago Booth. Booth’s Raghuram G. Rajan and London School of Economics and Political Science’s Minouche Shafik discussed the future of the social contract, and Booth’s Randall S. Kroszner moderated.

Randall S. Kroszner: Minouche, you’ve just published an excellent book, What We Owe Each Other, and talk a lot about the role of the social contract in capitalism and in society. What’s the objective of having a social contract?

Minouche Shafik: The social contract is an essential underpinning to capitalism, the mechanism through which we provide collective goods. These collective goods can be provided by family, the community, the state, or the private sector.

For most of the 20th century, the social contract looked like this: You had a male breadwinner in most households. Women were available to care for the young and the old for free. Most people got an education from the age of about 6 to 20, and that was enough for their entire working life. They worked for two or three employers over the course of their lifetimes. When they retired, they lived just a couple of years. If they needed care during that time, that was provided by their family. And then they died.

Now we live in a world in which more women than men go to university. Women are no longer available to provide free care services to the young and the old. The opportunity cost of them doing that is very high now.

Our relationship with employers is fundamentally different. People now don’t work for two or three employers in a lifetime; they might well do that in a week. More of these flexible jobs don’t include any benefits.

In the advanced economies, people expect to spend a third of their adult life in retirement, yet the number of years they’re working is nowhere near enough to support a third of their life in retirement. And of course, when they get very old, the need for care becomes a huge problem because their daughters and daughters-in-law are busy working and not available to care for them.

The social contract that we currently have is still responding to the 20th-century model, and yet we need something that’s very different to respond to the fundamental changes brought about by the evolving roles of women and technology, which have altered work and fundamentally what we want from education.

Raghuram G. Rajan: As Minouche says, earlier, a lot of the social contract was provided by the family, the community, and the locality you grew up in. It prepared you for a world of capitalism.

The question is, who or what prepared you for capitalism once markets expanded? Through the 20th century, we had an increasing role of the state in doing some of this. Some of it was brought about because the family or the community was unable to cope.

Think about the Great Depression and the social-security expansion that happened then. We didn’t get health care in the United States, but we certainly got a provision for the elderly. And that happened because communities were overwhelmed. It used to be each community looked after its frail and its weak. The young got their education, paid for by the elderly.
in the district, and they looked after the elderly. That broke down once you had social security, because the elderly were independent. Essentially, all these arm’s length contracts, as they have expanded, have reduced the need for relationships. We’ve seen in the pandemic a whole bunch of gaps spring up where neither the government nor the markets are present. The community has stepped up to fill these gaps. Who looks after the elderly and gets the groceries for them? It’s the young who stepped up and started doing it. Who looks after the migrants in India as they find that they have no social security in the big cities? Voluntary organizations step up and do it.

I think we agree that society has to step up every time the formal structure breaks down to fill the holes. That has to constantly evolve because the holes constantly evolve. And sometimes the growth of markets and governments crowds out the ability of society to do this.

**Kroszner:** How do we get the balance right?

**Shafik:** It’s a dilemma. Part of the reason the state got into this business was that there were very uneven outcomes, and if you were unlucky enough to be born into a poor or dysfunctional family, you didn’t get any support. The state has been trying to fill in those gaps and even out life chances, which is a good thing.

In terms of what we do, I think it’s a combination of norms and regulations. For example, as workers have become more mobile, one of the things we’ve done is to provide portable pension schemes, so as they move around, they can carry their pension entitlement. It seems to me that we’re getting to a place now where workers need portable benefit schemes and less of their social-insurance needs should be bound up with their employer.

And frankly, we should mandate that employers provide benefits to all workers regardless of their employment contract. Even if someone works for you for two hours a week, you need to put a little bit into their pension pot, and into their sick-leave entitlement, and so on. That’s an example of where you could use regulation to adapt to a different structure in society that continues to deliver a social contract in a way that’s responding to the reality of people’s lives.

**Rajan:** True, it disincentivizes private action. But the question is, would the private action be sufficient? In cases where it would be insufficient, maybe we need public action. I do think that in this environment, the issue of inequality is really important. In general, we believe that in a capitalist world, outcomes may be unequal, but everybody has the opportunity to participate.

And this is where it’s very important to recognize that you participate not as a baby but once you’ve sort of grown and got the capabilities. It seems part of the social contract that everybody should have acquired those capabilities. If they haven’t, this is an unequal society, and people naturally feel aggrieved.

Societies, especially as the demands for education have grown, have become increasingly unlevel. To make capitalism work along with democracy, you need a certain level of equity within society.

That doesn’t mean socialism. It does mean that when you’re thinking about capabilities, you have to have more equity in generating those capabilities—whether you’re talking about schooling and health care or about safety nets. That’s where we have to be much cleverer in design.

**Shafik:** I very much agree with what Raghu has said. In your book *The Third Pillar*, you talk a lot about the failures of education, the educational system in the US in particular, for social mobility. One of the interesting pieces of research I cite in my book, done by a colleague at the LSE with colleagues at Harvard, is called “Lost Einsteins.” They look at children in fourth grade in the US and find that 10 times more likely to have a patent. If you happen to be born in Silicon Valley, you’re 10 times more likely to have a medical patent.

“Societies, especially as the demands for education have grown, have become increasingly unlevel. To make capitalism work along with democracy, you need a certain level of equity within society.”

— RAGHURAM G. RAJAN
So the family you’re born into and where you’re born have huge consequences, even though, from a skill point of view, you start at the same places. And if we could even out the life chances of those lost Einsteins, we could quadruple the rate of innovation and productivity in our economy.

I don’t talk a lot about redistribution but about what economists call pre-distribution, or what Raghu is calling capability. How do you invest in those people earlier on and give them equal life chances so that capitalism’s promise of opportunity is actually realized?

Kroszner: When people say, “Should we have a socialist future or a capitalist future?” how do you respond?

Shafik: Well, I say that there are many flavors of capitalism. Capitalism in Denmark looks very different than capitalism in the US. The beauty of capitalism is that it has evolved. We used to have child labor; now that’s considered unacceptable. I think we’re at a moment when capitalism has to evolve dramatically in order to sustain public support.

Rajan: It seems to me that when capitalism ceases to offer opportunities, obviously there is more of a demand for redistribution as opposed to pre-distribution. When people find they can’t get jobs, then there’s talk of, “Well, why don’t we give a universal basic income?”

One of the supposedly new rationales is technology. The first mentions I could find of the demand for universal basic income was in the 1960s. It said, “Look, robots are going to take over. None of us are going to have jobs. Let’s go to universal basic income.” When I look around, robots still haven’t taken over. Even today, man plus machine or woman plus machine is much better than machine alone or human alone. We need to figure out how to aid humans in doing better jobs.

We need to figure out processes so that they can work better and more effectively. And when people say there are no jobs to be done, there’s so much in terms of unfulfilled demand. Try getting a medical appointment in Chicago. It takes three months to get to see a doctor.

But we need to think cleverly about how to fulfill that demand. How much do we do telemedicine? Why should I wait to see a doctor locally if maybe there’s something that somebody in the Philippines can tell me? But that doctor in the Philippines hasn’t got a license to practice in the US.

There’s a lot we can think about in terms of reorganizing work. That said, even with the best of efforts, there will be some people who simply don’t fit in. The labor-force participation rate in the US has fallen.

There may be people who have absolutely no skills in the current environment. Rather than see them as collateral damage, we have to figure out how to bring them back into the workforce. Work has become such a big part of having meaning in life. We need to look again at unmet needs and see if we can do better.

I was talking to a CEO the other day about whether elderly care is a place we could use a lot more people. It’s relatively unskilled. However, you need to have [qualities such as] empathy. Can a 50-year-old worker who’s been laid off from a manufacturing plant be retrained into that? I think it’s possible. The CEO said, “No, no way, no chance.” It’s not going to happen. Forget about it.” Well, we’ll have to try. We’ll have to try different things.

Shafik: To build on what Raghu said, I’m also not a fan of universal basic income. It’s economically inefficient. More fundamentally, in every society in the world, part of the social contract is that if you’re an able-bodied adult, you’re expected to contribute in exchange for being cared for when you’re young and you’re old.

Universal basic income undermines that basic principle. If someone has very low skills and earns a very low wage, I would much rather give them an earned income tax credit, top up their wages so they have a decent minimum standard of living. It’s much better for people to feel that they’re contributing to society.

Kroszner: Another aspect of the job market and the labor market is international competition. What’s the best way to respond to that? Is trying to provide some form of protection the best approach or are there other approaches?

Rajan: Emerging markets and developing countries have benefited hugely from trade. They’ve been able to grow even though domestic demand has been limited. This has benefited developed countries also, which have much cheaper

Watch the conversation
Visit our website for a link to a video from the event.
goods than they would otherwise have access to. The question is, how can we continue this?

The pandemic has been terrible for every country, but more so in the emerging markets and developing countries where you haven’t had much government support. You’ve had immense scarring of households. Many have dropped from the lower middle class into poverty. You have hunger now in a number of countries.

You have children who have been out of school for a year and a half, and they’re actually three years behind. Are they going to go back to school? No, because at some point the parents are going to say it’s not worth sending them to school, and the dropout rate is going to be tremendous.

So you’ve got scarring, you’ve got very little support, and you’ve got a lot of damage. Many small and medium firms have gone out of business because they haven’t been able to survive. If the lower middle class are unhappy and are unemployed, that leads to social conflict.

I predict the level of political conflict in many emerging markets in developing countries is going to increase tremendously once we have the opportunity to protest on the streets once more, once the pandemic wanes. This is going to be more fraught and fragile than we thought. It’s in the interest of the developed world to keep its borders open. The biggest source of incremental demand in these countries going forward will be exports.

Rather than thinking of closing down, we have to think about what more we can open up if we want reasonable work. It’s in the interest of developed countries, not just because of demand there but also, what’s the consequence if you don’t allow that? There are big differentials between countries. People move to equalize those differentials. It’s called immigration—or illegal immigration because you don’t want so many people coming. Think of what happened in Europe in 2015 and 2016. It was a reaction to the droughts in sub-Saharan Africa.

I can assure you, if we don’t have growth back in those countries, they will look for a better future in the developed world. If you don’t create growth there, they will look for growth here. I’m an immigrant myself, so I don’t want to dump on immigrants. They’re doing what comes naturally, looking for a better life.

It’s going to be hard to manage that level of immigration—[people will immigrate] for economic reasons as a result of the pandemic, as well as because of the effects of climate change.

Those are going to make agriculture unviable in many of these countries, push people out of agriculture, and then if there aren’t any jobs, they’re going to look for a new home.

With protectionism, particularly at this time, we’re shooting ourselves in the foot in the developed world. It’s better to think, how do we keep the levels of trade going? What do we do for people who have been hurt by the China trade? And so on. At the same time, how do we expand our ability to create win-win situations across the world?

There are ways of doing it. We have always, as economists, had a hard time explaining why trade is good and beneficial. But we need to make that case again, and much more strongly, because I think it is going to be our salvation.

**Shafik:** Our argument has always been that trade is good, an open economy is good, and we can compensate the losers with benefits. But we never really compensated the losers, and who wants to be a loser? We failed to grapple with that reality.

The most open economies in the world tend to have bigger welfare-state cushions because if you’re going to be subject to shocks, you have to be able to cushion your population. If you look at, say, the US, when the US signed NAFTA [the North American Free Trade Agreement] and they knew that there would be a shock to the automobile industry in Detroit, they had something called the Trade Adjustment Assistance. It says that if you are unemployed as a result of the impact of the signing of this free-trade agreement, you will get reskilling, relocation grants, wage subsidies, and all the ingredients a good economist would have designed. But Congress never put any real money behind it. You can point at the same thing here in the United Kingdom with the Migration Impact Fund, which was supposed to support communities that had big inflows of migrants but was also underfunded.

You have to think hard about resourcing these things properly if you want to avoid the political backlash we’ve seen in so many countries against both immigration and open and free trade.

**Kroszner:** What opportunities are there for people in a capitalist system to be employed, optimistic, and part of society?

**Shafik:** I’m a strong believer that jobs won’t disappear; jobs will change, and the key is to help people through those changes. Most countries in the world underinvest terribly in skills development.

Take, for example, the Nordic countries, which have labor markets that are highly flexible. There’s no notice period. You don’t get severance. They have the highest rates of labor turnover in Europe. People get fired all the time. Employers have huge amounts of flexibility. But they have to pay more tax, and that tax pays for generous unemployment insurance and reskilling. You get a year, and if you don’t find a job, you get put in one. They have the highest rates of employment in the world. They have figured out a model that is flexible but doesn’t generate the insecurity that we have seen in so many countries and the political consequences of that insecurity.

We know the best training happens in the workplace, not at some training center, so we need to find a way to incentivize employers to invest beyond their own interest, to overtrain their workforce beyond their own means through human capital tax credits or by giving workers an endowment to fund skills. I think that, too, needs to be part of a better social contract.—CON

*Randal S. Kroszner is deputy dean for Executive Programs and the Norman R. Bobins Professor of Economics, and Raghuram G. Rajan is the Katherine Dusak Miller Distinguished Service Professor of Finance, both at Chicago Booth. Minouche Shafik is director of the London School of Economics and Political Science.*
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The pursuit of self-interest. Sounds like a harmless phrase, right? And yet no matter of modern political economy is more subject to controversy than the moral status of this motive force. What should we make of it?

In my business ethics classes, I tell A Tale of the Two Shirts, an allegory of sorts for the ethics of self-interest and its evolution over the past few hundred years. To set the stage, I take my students back to the 18th century, to the dispute that most inflamed the earliest days of capitalism: whether to embrace commercial self-interest at all.

An infamous fable

Long before paeans to self-interest were a mainstay of microeconomics classes, the instinct was strictly frowned upon. To declare that a zeal for one’s personal affairs should be the spur to a thriving society was to effectively announce that one was wicked and insane. Wicked, because the notion that an individual should be guided by what is best for himself rather than the people around him smacked of the devil’s business. Insane, because the idea that a community propelled by such an instinct wouldn’t soon collapse into chaos was so entirely counterintuitive as to be ridiculous on its face. If, as the philosopher Thomas Hobbes maintained, a world ungoverned by the iron fist of some central authority soon gave way to a war of all against all, private pursuits were a luxury no society could afford.

Insofar as Hobbes’s assumption was a commonplace of the world in which Adam Smith came of age, a supreme accomplishment of Smith’s The Wealth of Nations was the presentation of a sustained scientific argument for how a civilized society might be organized without the visible hand of the crown planning every commercial enterprise. Yes, in the land of laissez-faire, not every expression of self-interest would be honored—the laws would still prohibit the proclivities of pickpockets and confidence men—but Smith provided a credible vision for an economy in which the private interests of most commercial actors could be pursued without coordination or preclearance.

But what about the wicked part? It is one thing to say that it is possible to build a stable society upon the bedrock of self-interest, but morally speaking, is it desirable?

This was a thornier problem for Smith. He not only had to confront the moral sensibilities of the age, but he also had to contend with a mischievous spirit who had tackled the matter before him. If largely forgotten by history, Bernard Mandeville was one of the most consequential figures of the generation of intellectuals who preceded Adam Smith. A Hollander by birth, an Englishman by choice, and a physician by training, he is mainly remembered for “The Grumbling Hive,” a satirical poem published anonymously in 1705. The sixpenny pamphlet grew into a book, The Fable of the Bees, that eventually came to include two essays, a commentary, and 20 “remarks.”
Bluntly stated, humans are, and always will be, self-interested creatures. Period. Fair enough, but does that also mean humans are, and always will be, selfish?

In other words, according to Mandeville (après Smith), humans always and everywhere act only on their own behalf, and to portray them in a more altruistic light, much less to predicate an entire economic system on such motives, is to confuse the foolish aspirations of a “vain Eutopia” for the harsh realities of the human condition.

Bluntly stated, humans are, and always will be, self-interested creatures. Period. Fair enough, but does that also mean humans are, and always will be, selfish? It is one thing to say that human beings will inevitably do what they want to do—a fairly unremarkable observation that often passes for revelatory insight—but are the things that humans want to do themselves always the stuff of selfish behavior?

Smith didn’t think so. To say that some act is self-interested is merely to define a motive. (I am doing something to benefit myself rather than to benefit others.) But to further say that the act is selfish is to render a moral judgment. (In crude terms, that it is a bad act rather than a good one.) Accordingly, if every action we take without a gun to our heads is effectively selfish, as Smith accuses Mandeville of contending, it follows that any voluntary act in an act of selfishness.

To Smith, this suggestion is not merely absurd, but it also makes a mockery of the extraordinary amount of time we all spend debating what exactly our interests should be.

When you try to convince a friend to stop smoking, go to church, or finish a college degree, you are basically saying that she should be motivated by better interests than those that currently guide her. We do this directly in the recommendations we provide others, but more often implicitly in the approval or disapproval we show the choices they make. For instance, if a friend says he intends to lose weight because diabetes runs in his family, most of us would respond approvingly. (That’s wonderful news! Tell me how I can help.) It would be less strange than strangely sadistic to declare that such a choice is clearly the mark of someone acting out of a sense of selfishness.

And yet, it is still the case that, when we choose to lose weight to improve our health, we do so principally for ourselves, even if others are pleased or even relieved by the decision. For Mandeville, that fact is enough to render the choice morally suspect, but Smith contends that almost no one honestly believes this. Instead, we recognize that not all self-interested pursuits are created equal. Some are clearly better than others, and indeed so
much of the project of leading a moral life is trying to determine which interests are worthy of our approval and, therefore, should guide us.

**A tale of the two shirts**

Debates over the interests that ought to guide us are all well and good, but what is the connection between them and the economic project that Adam Smith is best known for? The answer is in how these interests play out in the material world of the marketplace.

Again, Smith calls out Mandeville’s absolutism. “It is the great fallacy of Dr. Mandeville’s book to represent every passion as wholly vicious, which is so in any degree and in any direction,” he wrote. Thus, any desire for pleasure or ease that “falls short of the most ascetic abstinence” is a “gross luxury and sensuality” such that, for Mandeville, “there is vice even in the use of a clean shirt, or of a convenient habitation.”

This is a novel conclusion, Smith thought, and, like a snake charmer, it may enchant us if we stare long enough at it, but if we take a step back, it seems a little ridiculous. I mean, quite honestly, does anyone really think there is anything objectionable in the desire for a clean shirt?

Each year, I present this question to my students, asking them by a show of hands to indicate whether they think the desire for a clean shirt is selfish. It won’t come as a surprise to hear that, at Chicago Booth, there are almost no disciples of Bernard Mandeville.

Having taken note of their verdict, I step to my right and ask if the desire for one new shirt a year from Walmart strikes them as selfish. Again, few takers. I step to my right again and propose three new shirts a year. Maybe a hand or two. Then, right again, how about a $450 Sea Island cotton shirt from Ermenegildo Zegna? Now we have some hands. How about three of these shirts? More hands. 10 shirts? 20?

And on and on until, at the far end of the room, I ask them about the desire for a gold-spun shirt with ruby buttons for $250,000. By now, every hand is up—or nearly every hand, but we’ll return to the holdouts later.

Why do people put their hands up? That’s a complicated matter. For some, there comes a point when purchasing so many shirts seems an unappealing exercise in vanity. For others, if a little luxury indulgence is tolerable, too much is evidence of poor priorities and personal budgeting. For still others, a dollar spent on excess shirts is a dollar that might have gone to feed, shelter, or clothe the poor and vulnerable.

That there won’t be universal assent on the fine line between laudable self-interest and outright selfishness, or on the precise reason for flipping between them, is not a matter that bothered Smith. The key for him was that Bernard Mandeville is wrong when he says your desire for a clean shirt is selfish. When someone holds that anytime we think about our own needs, however modest they might be, we should feel embarrassed, that sentiment is at odds with the visceral wisdom of common sense. At the same time, it effectively shuts down any discussion of how we should lead our lives and the choices we might make individually and in common.

Which is another way of saying, it shuts down any debate about ethics.

As I said, Mandeville’s clean-shirt standard finds few adherents in my classes, but what about the holdouts at the other end of the spectrum, those unwilling to say that the desire for the gold-spun shirt strikes them in any way as outrageous? Personalizing the choice means to change a few minds: *Would you really be indifferent if your buddy blew a quarter-million dollars on a ridiculous shirt?* But most of the time, resistance remains. What should we make of it?

Perhaps there are some people who sincerely see nothing wrong with the desire for a gold-spun shirt. But whenever I confront such students, I am reminded of the most famous (and famously misunderstood) quote from Adam Smith’s close friend, the philosopher David Hume: “Reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey.” What Hume meant by this is not that we should be slaves to our every desire, but, rather, that when we strive to override our sentimental understanding of the world—the feelings of like and dislike that form the basis of our moral, political, and aesthetic opinions—we risk becoming slaves to some ideological disposition.

In their own impassioned desire to defend free markets, proponents of capitalism will sometimes go to such great lengths arguing for the necessity of self-interest that they convince themselves of the wisdom of a reverse Mandevillianism and, therein, the warrant of the gold-spun shirt. Rather than any act of self-interest being morally suspect, *all* may be countenanced. Never say a word against greed, vanity, or selfishness (so the thinking goes) lest you begin paving the road to serfdom.

The problem is not only that this requires positions no one is actually comfortable with—do you really have no objection to the thief pursuing his self-interest when he snatches your wallet? It’s also that it warps the reasoning mind and robs capitalism of precisely the kinds of debates that Adam Smith thought were vital to the system’s success. If Mandeville was right, if capitalism is merely a system where private vices yield public benefits, it may endure for a time—to keep the wolf of poverty at bay, one will gladly sacrifice some scruples. But we will never be more than ambivalent about the system, and, more to the point, we will always be on the lookout for a safe opportunity to abandon it.

For Smith, rather than imperiling capitalism, debates about the worthiness of various interests, the ways they might be pursued, and the trade-offs between them were essential to the resilience of a free enterprise system. They strengthened the reflexes of personal responsibility and self-regulation that relieved the king—or, for that matter, a queen bee—of enlightened intervention. The hive of commerce would keep buzzing, but only if the participants could pursue their interests without constant fear of being stung.

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*John Paul Rollert is adjunct associate professor of behavioral science at Chicago Booth.*
What is the evidence that working from home will really stick?

Steven J. Davis: About a quarter of all paid workdays will be done from home after the pandemic’s over in 2022 and later, according to our survey evidence. We’ve been through a mass compulsory experiment for individuals and organizations, and when you are forced to experiment, you learn things. Organizations and individuals figured out that working from home works well for some things and not for others. When we ask individuals directly, how did it work out compared with what you expected, they say, on average, much more positively. The people who had the positive productivity surprises when working from home are the same ones whose employers plan for them to work from home more often after the pandemic. We’ve also made big investments in making work from home work better, so we’re better at it. Ongoing technological improvements suggest that working from home will continue to improve. There have also been big attitudinal shifts, and we’ve been at this for a long time, so habits, work processes, and lifestyles have had time to get entrenched.

Are employees as productive working from home?

Davis: It’s not that people are more productive working from home on average. The gains are for organizations and individuals who’ve learned that for certain tasks, you can be just as productive from home. They’ll continue to do those things from home. Things that didn’t work out so well will go back to pre-pandemic patterns.
The other big point is about saved commuting time. According to our evidence, about three-quarters of the productivity gains flow from employees saving 60–90 minutes a day by not commuting. Some of that time goes to working more on your primary job, according to our surveys, and some goes to leisure. Over time, we would expect pay to adjust to reflect that. If employees really value working from home, the employer’s going to get some of that benefit as well.

**Michael Gibbs:** My colleagues and I conducted a case study that found a productivity decline. We analyzed data from 10,000 employees at a large IT-services company, comparing their productivity for a year before the pandemic with the first five months of working from home. For employees, performance stayed about the same, but their working hours increased significantly, so their productivity per hour of work fell by 10–20 percent on average—even more for those with children at home, although there was no difference between mothers and fathers. And women had larger declines in productivity than men, whether they had children at home or not. The biggest driver of the decline was a loss of focus time, when employees are working without distractions. The company learned that by tracking employees’ behavior on their devices, seeing what apps they’re using, etc.

**Davis:** We should note that the productivity measures in Mike’s study and our surveys are different. We explicitly factor in saved commuting time, and Mike and his collaborators do not. But there are a few big productivity killers: having young kids at home, not having a separate room to work in, and not having a good internet connection.

**What are the challenges for organizations in managing remote workers?**

**Melina E. Hale:** I am working on this in the University of Chicago provost’s office, and partnering with leadership in Human Resources. There’s a lot of great research on this topic, but there are a lot of open questions, too, particularly as we’re in a new environment where we’ve all had an 18-month bootcamp in performing work remotely. Our approach has been to go into this year of consideration of long-term remote work with a spirit of experimentation. We don’t have a single university model for remote work but rather have asked units to develop their own pilots with our support. We’re encouraging them to try things out, change them and adapt if they aren’t working, and then evaluate what they’ve learned and use the experience and evaluation to figure out what comes next. At the institution level, we are putting together a view of remote work across campus to assess emergent opportunities and risks and to consider how to best support employees and their managers.

**Davis:** I think that’s exactly the right approach. There are big differences across people and how much they value working remotely. An obvious example that comes through loud and clear in our data is that women with young children at home have particularly strong desires to work from home part of the week. So it’s very important to recognize that.

There are some real challenges because people will make different choices, as much as you let them make choices. Jobs differ greatly in their capacity to be done from home. Sometimes the organization can equalize those differences, and we see evidence of that. Most jobs at the lower end of the earning spectrum have little capacity to be done from home.

One of the big challenges that I expect to emerge in coming years is we’re going to see well-educated, highly paid professionals having lots of opportunities to work remotely; meanwhile, people who earn a lot less may be compelled by their employers or the nature of their job to come into work five days a week. That may not sit well with those workers. But there’s a lot of potential to manage this in a way that smooths out those potential sources of resentment. If you’re oblivious to them, they may come back and hit you hard.
One way is to restrain wage increases for employees who choose to work from home, recognizing that saved commuting time is part of their compensation, whereas those who don’t have that option can only be compensated with more money or benefits. Our surveys suggest that, on average, people would be willing to forgo a pay increase of 8 percent for the option of working from home for the two or three days a week that they choose.

**Gibbs:** I’m an economist—it’s supply and demand. On the supply side, almost all employees would value the option of more flexibility, more ability to work from home, and so forth. But on the demand side, we have to think about the impact on the organization. There are some jobs for which working from home can be very costly. For which types of jobs is it most appropriate, or inappropriate? That’s got to be part of the calculation and the setting of expectations for employees. Jobs that involve significant interpersonal interactions are most problematic.

In our study, those whose jobs involve more communication and teamwork, it’s their productivity that tends to suffer more. I suspect innovation is going to suffer as well, because innovation comes from interpersonal interactions, many of which are unplanned, spontaneous. Urban economists often talk about agglomeration effects, the benefits to having people located together in the same city. They emphasize that you see more patent activity because of people interacting with each other within and across companies. That’s going to be much harder if people don’t meet in person more often.

**Davis:** No doubt a lot of benefits come from agglomeration, from people bumping into each other and interacting. But let me tell you about my day. This morning I was on a seminar organized in California. Then I was on a call with 50 or so private-equity folks from all over the US. Now I’m talking to you guys via Zoom. By not being physically together, we do lose something. I can’t read everybody’s body language as well, for example. On the other hand, the scope for interacting virtually across space and with different people is vastly improved by video-conferencing technologies. And, as I said before, they’re getting better and better. So the impact of remote work on innovation is much more subtle than just the idea that we can’t have water-cooler conversations anymore. The geographic reach of whom we can talk to and whom we can learn from is tremendously expanded. I think that expansion’s going to continue as these technologies continue to improve, as they try to substitute—not perfectly, but more effectively—for the water-cooler-type interactions.

**Gibbs:** I agree completely. It’s been very easy for me during the pandemic to collaborate with researchers that I already knew. But I’m not meeting new people. When you go to conferences and interact in person, you meet people. You have a drink with them. You have dinner. You chat. Those interactions are the ones that have led to my collaborators throughout my career.

We should also think about, in certain kinds of innovation, the physical component. As an economist, I think about field experiments and interviews in the field. For an IT-services company, such as the one we studied, there’s software and hardware. The hardware guys had a much bigger problem because they need lab equipment and the space for a lab.

**What are the implications of hybrid work for equity?**

**Hale:** On the one hand, being able to work from home can be incredibly beneficial to some people. On the other hand, there can be significant at-home expenses of remote work, and other costs, and we need to understand, and hopefully mitigate, the impact of those negative factors on employees. Another question for us at the University of Chicago is, if employees can work in a hybrid fashion or fully remotely, are they more likely to live farther away from the university because they don’t have to commute every day? Remote work opens up a broader geographic area in which employees could reasonably be expected to live. We care really deeply about the South Side and having a diverse and wonderful community here. We don’t fully understand what the impact could be, but it’s something I’m concerned about regarding equity and how remote work might change our community.

On the issue of productivity related to women with children: I have three children and I worked full time through their childhoods. There are times when I used my ability to have a more flexible work schedule and work from home and that was incredibly valuable to me. Sometimes I was having fun with my children—supervising a playdate, for example. Sometimes I was taking care of them when they were sick. That time was not the quality of the work product. I worry that measuring productivity as simply work accomplished in a given period of time ignores the value of flexibility, which may increase time spent on work but not the quality of the work product.

**FOOTNOTES**

“**I worry that measuring productivity as simply work accomplished in a given period of time ignores the value of flexibility, which may increase time spent on work but not the quality of the work product.**”

— MELINA E. HALE
are a reasonably good fit for the skills that you have to offer. That’s not true for many people who don’t live in dense urban areas in the United States and around the world because, for example, that’s not where their spouse has a job, that’s not where their family lives, or that’s not where they grew up. Lots of people don’t have great opportunities to fully exercise their skills because there’s no job around where they live that gives them that opportunity. If they can work remotely most of the time and maybe go into the city once every month or two, that opens up a much wider range of opportunities.

One aspect of equity that’s also pro-growth is allowing people who have skills that they could not otherwise exercise effectively in the labor market to do so remotely. That’s an even more important issue globally, considering how many people live in areas where the road system isn’t very good. Some women live in regions where it’s socially suspect to mingle with men in the workplace or where it’s not safe to go outside after dark. There are a lot of people whose labor-market opportunities are constrained by the traditional work model, where you have to go to the work site five days a week. It’s worth keeping that in mind on the equity side.

**What are likely to be some of the longer-term economic effects of hybrid work?**

**Davis:** There are real challenges for inner cities. The reason is pretty obvious: mass-transit commuting is down. That means fewer workers are coming into certain parts of downtown, like the financial district in Chicago. I don’t live too far away from there. And that means for all those shops, personal-service restaurants, and bars that serve those workers—taking their spending dollars before work, after work, at lunchtime, on Friday nights to celebrate, and so on—there’s much less of that activity. I walked down Michigan Avenue yesterday, less than a mile from my home, right across from Millennium Park—prime real estate. Within a block, there are two fast-food places and one coffee shop, which used to be my favorite coffee shop, that are closed this far into the pandemic. What does that all mean? That means cities need to expeditiously repurpose their space so that they don’t lose the vitality they had before. That may mean more mixed-use residential businesses. It may mean making yourself a destination for entertainment activities because there won’t be as many office workers—entertainment for the workers who used to have those jobs. That’s a big deal because as they move out to the suburbs, they take their spending dollars with them. From the suburbs, it might not be so easy to get them to take the train into downtown Chicago. So it has implications for how we organize our transport system and for who can get which types of jobs. There’s a whole set of profound challenges there.

**Gibbs:** If you think about the mass forced experiment that we’ve gone through, the enormous learning, the investment in new tools and technology, the cultural changes—both outside organizations and within organizations—these are all fantastic opportunities for organizations to evolve in ways that give us more flexibility in how we perform our work, not just when and where—but also give us greater flexibility in how we organize our lives and work together. In the spirit of Ronald Coase of the University of Chicago, the opportunities for Coasian bargains between organizations and their people are exciting to me. Once we work out the challenges, I think this will be very positive.

**Davis:** One underappreciated benefit of this pandemic-induced shift to remote work is that we’ve learned how to do it. For example, here’s my experience of teaching on Zoom: I once taught remotely with two weeks’ notice, and it was an utter disaster. This past summer, I taught in a hybrid mode. It wasn’t as good as teaching in person, but it was way better than my initial experience. That’s because I’ve learned and the university’s learned.

Aggregating that to the macro perspective, what it means for our society as a whole is that we are much more resilient economically and probably socially in the face of the next pandemic-like disaster that might hit us. As I understand from epidemiologists, we could get another pandemic, a variant of COVID-19, or some other kind of disaster that inhibits people from traveling and from in-person communication. We are much better prepared as a society to respond to that productively now because of this very hard experience that we’ve been through. That’s an important point and worth keeping in mind. There are some subtle benefits of what has been in some ways a horrendous experience.  

“**These are all fantastic opportunities for organizations to evolve in ways that give us more flexibility in how we perform our work, not just when and where.**”  

— Michael Gibbs
IS CORPORATE CONSOLIDATION DRIVING UP PRICES?

If there’s a single issue that crosses political lines in the United States, it’s antitrust. Politicians on both sides of the aisle have argued that corporate consolidation has driven down wages for workers and driven up prices for consumers. This past July, the White House issued an executive order that, among other things, directed antitrust agencies to step up enforcement with a focus on agriculture, labor, health-care, and technology markets. But how aligned are economists on this issue? Chicago Booth’s Initiative on Global Markets asked members of its US Economic Experts Panel to express their views. (For more on the topic, read “Does America have an antitrust problem?” in the Winter 2019/20 issue and online at Review.ChicagoBooth.edu.)

About the IGM Economic Experts 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 a diverse panel of expert economists, all senior faculty at the most elite research universities in the United States and Europe. The panel includes Nobel laureates and John Bates Clark medalists, among others. Polls are emailed individually to the panel members, and panelists may consult whatever resources they like before answering. Members of the public are free to suggest questions.

See more online
All responses to these polls can be seen at igmchicago.org.
**Statement A:** Industry consolidation and weaker competition in the US meaningfully constrain innovation and wage growth.

*David Autor, MIT*


*Response: Agree*

* Austan D. Goolsbee, Chicago Booth*

Corporate consolidation, record-breaking profits, and the lowest labor share of national income on record are probably just a coincidence. . . .

*Response: Strongly agree*

*Hilary Hoynes, University of California at Berkeley*

Agree that it constrains wage growth, especially for lower-skill workers. Uncertain about innovation.

*Response: Uncertain*

**Statement B:** Americans pay too much for broadband, cable-television, and telecommunications services, in part because of a lack of adequate competition.

*Daron Acemoglu, MIT*

I think here we are on firmer ground and there is more evidence supporting this claim.

*Response: Agree*

*Kenneth Judd, Stanford*

There is competition; for example, satellite competes with cable. Switching costs keep me from considering changes in service.

*Response: Disagree*

*Steve Kaplan, Chicago Booth*

Wasn’t US broadband more reliable in the pandemic than it was in Europe?

*Response: Uncertain*
Electricity-hungry crypto miners affect the economy

As demand for bitcoins has risen, the crypto-mining process through which they are generated has relied on enormous amounts of electricity for computing power. Massive crypto-mining warehouses that run 24 hours a day have sprouted in cities around the world. While this has prompted many to worry about global pollution, crypto mining also creates local problems for communities, according to University of California at Berkeley’s Matteo Benetton and Adair Morse and Chicago Booth’s Giovanni Compiani. When a large bitcoin processor comes to town, a surge in demand for power raises electricity prices paid by households and small businesses. Or in cities where prices are fixed, it can lead to rationing the supply of electricity. Either way, the huge shift in demand leaves households and small businesses substantially worse off. While the local economy stands to benefit from higher tax revenues from new crypto-mining businesses, the researchers find that this offsets only a small portion of the costs to the community, as resources are effectively transferred from consumers not only to crypto miners but also to electricity producers, which benefit from being able to charge higher prices. To learn more about this research, turn to Page 7.
See you soon

As the public-health situation evolves, Chicago Booth and the University of Chicago continue to sponsor many opportunities for inquiry and for participants to gain insights. Some events below will be held in person, and others will be held virtually. More information can be found at the websites listed.

DECEMBER 6–10, CHICAGO
FINANCIAL ANALYSIS FOR NONFINANCIAL MANAGERS
ChicagoBooth.edu/FANM
Gain a practical understanding of how to interpret and use internal and external financial reports to shape the decision-making process.

DECEMBER 13–17, CHICAGO
NEGOTIATION AND DECISION-MAKING STRATEGIES
ChicagoBooth.edu/NDMS
Learn how to negotiate hard and with integrity, using the basic influence techniques of professional negotiators.

JANUARY 10–21, ONLINE
WEALTH PLANNING ESSENTIALS
ChicagoBooth.edu/WPE
Gain insights on protecting your assets and other knowledge to help navigate these uncertain times.

JANUARY 12, CHICAGO
JANUARY 19, HONG KONG
FEBRUARY 2, LONDON
ECONOMIC OUTLOOK
ChicagoBooth.edu/EO
Hear from Booth’s renowned faculty members as they evaluate emerging trends and share key insights that help reframe our understanding of the world to come.

JANUARY 14, CHICAGO
VENTURE CAPITAL INVESTMENT COMPETITION
ChicagoBooth.edu/VCIC
Play the role of a venture capitalist in this simulation. Top performers go on to represent Booth in regional and national competitions. Open to current MBA students only.

JANUARY 31–FEBRUARY 11, ONLINE
MERGERS AND ACQUISITIONS
ChicagoBooth.edu/MA
Acquire the analytical framework and tools necessary, through this interdisciplinary program, to execute mergers, acquisitions, and corporate restructuring successfully.

FEBRUARY 8, ONLINE
ENTREPRENEURSHIP ESSENTIALS: NETWORKING FOR SMALL BUSINESSES
ChicagoBooth.edu/entrepreneurship-essentials
Learn networking tips at this workshop, which will feature Anna Maria Viti-Welch, president of the Viti Companies, an independent insurance and financial-planning agency.

MARCH 3, CHICAGO
CNVC FINALS
ChicagoBooth.edu/CNVC-finals
See College New Venture Challenge finalists present to a panel of judges comprising investors, entrepreneurs, and industry experts. Prizes have helped past CNVC finalists including Quevos, Cubii, Frönen, and Moneythink grow into successful businesses.

ONGOING
EXECUTIVE MBA ADMISSIONS EVENTS
ChicagoBooth.edu/exec-events
Meet students and alumni and hear from Booth’s Admissions team at regionally focused events.

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