for all

FALL 2020

INTERVIEW: Sandra Black on Unequal Opportunities and the Cost of Bad Policy

AFTER GEORGE FLOYD: Will Economics Change? A Call to Action from William Spriggs

DATA DIVE: Looking at COVID-19's Disparities

THE MAGAZINE OF THE OPPORTUNITY & INCLUSIVE GROWTH INSTITUTE

Sophie Ọṣọtimẹhin, Associate Professor, Université du Québec à Montréal and Institute Senior Scholar

FEDERAL RESERVE BANK OF MINNEAPOLIS

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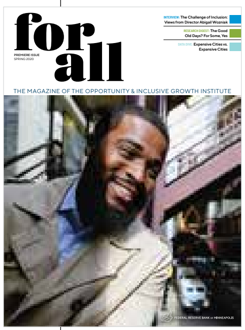
About the cover

In a rare moment outdoors during Quebec's strict stay-at-home order last spring, Institute senior scholar Sophie Ọṣọtimẹhin took this selfie, with her husband, data scientist Julien Duranton, behind her. We talk with Ọṣọtimẹhin about her working life under Montreal's quarantine on page 13. You can find her Research Digest about health and economic risk during the pandemic on page 22.

Our first issue

We know that *For All*'s premier issue never got to many of you. Most of you were set to receive our new magazine via U.S. mail at your places of work. Of course, like us at the Minneapolis Fed and the Opportunity & Inclusive Growth Institute, you were sheltering in place, working at home, and, we hope, staying healthy.



In our March issue, we profiled four of the Institute's visiting scholars. In an interview, Director Abigail Wozniak offered her vision for the Institute and what excites and concerns her about the field of economics. We presented four digests of Institute-related research and an infographic about housing trends from economist Issi Romem. Minneapolis Fed President Neel Kashkari explained why we've created this magazine.

You can find all of those articles and a full pdf of the magazine at **minneapolisfed.org/for-all.**

Enjoy that issue and this one, and tell your colleagues about *For All.*

For All
The Magazine of the Opportunity & Inclusive Growth Institute

Federal Reserve Bank of Minneapolis

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FROM THE DIRECTOR

BY ABIGAIL WOZNIAK

A test of our concept, and an accelerator

When Minneapolis Fed President Neel Kashkari announced the creation of the Institute in 2017, he emphasized the need to better understand, through research and data, our economy's racial and economic disparities. Little did he know that Minneapolis would become home to the grim spark that ignited a national conversation about opportunity, an inclusive economy and, fundamentally, racism and criminal justice.

And none of us in the economics community could have known we'd be faced with a global pandemic at the same time we struggled with George Floyd's death at the hands of the police. His killing and the demonstrations it sparked literally hit close to home, in neighborhoods where many of our staff live.

We highlight COVID-19 and the Institute's work related to it in this issue of *For All.* But we also present excerpts from a call to action for economists from Advisory Board member William Spriggs. His letter is an accelerator for us at the Institute, encouraging us to invest more deeply and move faster on efforts to model and foster inclusion in our day-to-day operations and research. In coming issues, we'll report on our commitments to inclusion in practice and research.

The coronavirus' test of the Institute concept cuts across disciplinary lines, touching public health, worker safety and security, community resilience, and financial stability. It requires a response that crosses between research fields and between scholars and the communities they study.

For me, examining in real time the impacts of COVID-19 on the well-being of Americans was a priority. Because of the fast-moving virus and policymakers' need to know how it affected people, I felt we couldn't wait.

On March 26, we posted on our website a proposal I developed. With the help of our interdisciplinary academic Advisory Board, I created a survey tool and was able to partner with the Data Foundation to make the COVID Impact Survey, or CIS, a reality.

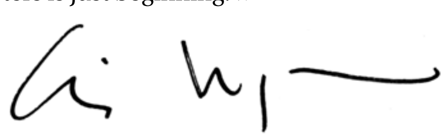
A key element of the survey was its focus on specific geographic areas. This was not only a national survey, but also one that policymakers in 10 states and eight cities could use to understand COVID-19's effects on their communities. In selecting a range of locations, we could also understand the impact across different demographic groups. This same approach was later adopted by the U.S. Census Bureau for its rapid response Household Pulse Survey.

By April 30, we were in the field, comparing COVID-19-era responses with pre-COVID-19 benchmarks, including measures of employment, hours, social connectedness, food security, and mental health. A second key feature of the CIS was its focus on surveying a broad set of outcomes and behaviors that could be expected to be hit by the outbreak. We drilled down to analyze measures locally.

By June 11, we collected a series of critical results: first, massive reductions across the board on multiple measures of well-being; second, substantial differences across states and metro areas in the size of those reductions, with some places faring worse than others. These differences were not linked to pre-COVID-19 place features. Rather, larger shares of the hardest hit workers appear more responsible for these differences, including workers of color, particularly Latinos, younger workers, and those with school-aged children.

To read more about the CIS, go to **covid-impact.org/results**. And see our Data Dive on page 28.

Institute scholars will continue to help policymakers and the public better understand COVID-19's impacts. But, as Bill Spriggs tells us, our work on many other matters is just beginning. ★



Abigail Wozniak is the director of the Opportunity & Inclusive Growth Institute and a senior research economist at the Minneapolis Fed.

"We are in a dangerous time"

Higher ed funding sure to be cut as student well-being declines BY JAY WEINER

The devastating effects of COVID-19 have created many uncertainties for the nation's colleges and universities. But several issues were undisputed during the Institute's 2020 Spring Conference, "Higher Ed: Who Pays?"

The pandemic will almost surely worsen the already deep declines in government funding for public higher education. Many students, reeling from burdensome debt before the pandemic, are now facing even tougher health and economic challenges. And students of color are being hit hardest.

The "new economics" of higher ed were the timely and troubling focus of the conference, co-sponsored by the University of Minnesota's Economics Department and conducted via Zoom.

Uncertainty U Whether on campus or remotely, students face challenges beyond the classroom.

AMANDA ANDRADE-RHOADES/WASHINGTON POST VIA GETTY IMAGES

"COVID is exacerbating weaknesses in our [higher education] system," said the University of Michigan's Susan Dynarski. History shows, she said, that economic downturns mean further cuts to state funding for colleges and universities—institutions still recovering from reductions during the Great Recession.

But the pandemic's impact could be deeper and different. "We are, indeed, in a very dangerous time," Dynarski added. She and other panelists feared the demise of some colleges and a growing inability of low-income students to afford tuition. Many jobs usually held by college students have disappeared because of COVID-19, she noted. During the Great Recession's declining job market, students flocked to higher education hoping to gain skills. That's not likely to happen now.

The keynote address from Temple University's Sara Goldrick-Rab focused on the health and well-being of college students. Both are in rapid decline because of the coronavirus, she said, sharing results from a survey she conducted in spring 2020 of nearly 39,000 students attending 54 higher ed institutions.

"There is no college opportunity if one is not well enough to go to school," said Goldrick-Rab, citing her finding that 58 percent of students responded that they were experiencing housing challenges, food insecurity, or homelessness. A telling point: In fall 2019, 72 percent of African American students experienced these insecurities, 16 percentage points higher than for White students. By spring 2020, the Black-White gap had increased to 19 points.

She urged colleges and universities to better inform students about the resources available to them, such as unemployment insurance, the Supplemental Nutrition Assistance Program, or other on-campus emergency aid. "Connecting their students to support is key," she said of higher ed institutions' responsibilities in these uncertain times. ★

A video of the "Higher Ed: Who Pays?" conference and the presenters' slides are available at **minneapolisfed.org/institute**.

Last spring, the 18-member 2020-21 class of Institute Visiting Scholars was named. Some established, some emerging, they bring a diversity of backgrounds and research interests as they examine what sorts of policies work to improve economic opportunity and inclusion, and why. We talked to four of them about their work.

TERRY-ANN CRAIGIE
Associate Professor of Economics, Connecticut College

THE LABOR MARKET AND THE "JUSTICE-INVOLVED"

Since the 1970s, changes to sentencing laws have led to a dramatic increase in the U.S. correctional population. There are now more than 100 million adult Americans with some form of criminal record. That's one in three adults.

That, says Terry-Ann Craigie, presents a significant problem for the labor market. A criminal record is a barrier to securing many of society's goods, like education and housing, but it is especially detrimental to those seeking employment.

"Having a criminal record is really like having a death sentence in the labor market," Craigie said.

Craigie, who pursued a degree in economics because she says the field has a "grand toolkit for addressing big social problems," took a closer look at this particular problem for those who have come to be called the "justice-involved," that is, citizens who have had contact with the criminal justice system.

"Having a criminal record is really like having a death sentence in the labor market."
—Terry-Ann Craigie

Until fairly recently, many applications for public sector jobs included a check box about criminal history. In 2003, a grassroots effort to Ban the Box was launched, encouraging public employers to defer this question until later in the hiring process. This way, qualified candidates are not prematurely eliminated.

Craigie shows that the adoption of Ban the Box in many state and local jurisdictions increased the odds of securing a public sector job by 30 percent. As the country emerged from the Great Recession, these policies, in combination with a tightening labor market, created a perfect storm.

Early opponents of Ban the Box worried that if a person with a criminal record was hired for a job, then someone without a record probably wasn't. Craigie says this doesn't bear out.

As overall unemployment fell to record lows in the wake of the recession, Black unemployment did too. "Disproportionately, Blacks and Latinos have criminal records, and we know that their rate of unemployment [in the years that followed] fell to close to 5 percent."

But what will a coronavirus-induced recession mean for the justice-involved? As the odds of finding a job go down, the risk of recidivism goes up. Further complicating the issue: Prison populations have somewhat declined to help maintain social distancing standards.

"We're entering a recession once again, so what is going to happen to this population?" Craigie asked. "[Will] we continue to treat them as marginalized? I hope not."

—Alyssa Augustine

TROUP HOWARD
Assistant Professor of Finance, University of Utah

FINDING EVIDENCE OF RACIALLY BIASED TAXES

As an education consultant in Chicago, Troup Howard would often hear community leaders fret that minority homeowners were overtaxed. There wasn't a specific cause they pointed to, just an understanding that this was how things have always been.

Fast-forward a few years and Howard was a graduate student at the University of California, Berkeley, looking at property taxes for a pension study when he and co-author Carlos Avenancio-León realized that their data could also provide evidence of racial inequality in taxation.

Historians have documented such bias in the 19th and 20th centuries, Howard said. "What we realized was that we were going to have the econometric tools to be able to test that hypothesis in aggregate data in the modern era—within the last couple of decades."

His research found that community leaders were right and that the assessment process is to blame.

The assessed value of a home is what the government estimates it's worth if sold on the market. Taxes are levied on the basis of this value. If assessments were perfectly fair, the ratio between assessed and market values would be the same for every homeowner in a given taxing district.

But looking at homes sold from 2005 to 2016, Howard found the ratio for Black and Hispanic homeowners 10 to 13 percent higher on average than the ratio for White homeowners.

Half of this "assessment gap" occurs because assessments aren't as sensitive to differences among neighborhoods as the market is, according to Howard. Minority neighborhoods often have characteristics home buyers don't want, such as poverty. But assessments often lump together neighborhoods in large areas without accounting for vast socioeconomic differences.

Howard said just accounting for differences among ZIP codes would dramatically narrow the gap.

As for the other half of the gap, Howard found evidence suggesting that minority homeowners are less likely than Whites to appeal their assessments, less likely to succeed, and less likely to get as high a reduction in value.

"As a scholar, I'm interested in how financial choices of state and local governments affect both regional economies and household finances," he said. "The home is typically the largest asset owned by many, many families. Property taxes are the central pillar of essentially all local government budgets."

—Tu-Uyen Tran

KRISTA RUFFINI
Assistant Professor of Public Policy, Georgetown University (2021)

RAISING WAGES AND INVESTING IN HEALTH

How can increases in the minimum wage benefit people who are not part of the labor force? Here's one striking example: Caregiver wages can be a matter of life or death for nursing home residents.

So says visiting scholar Krista Ruffini, who acknowledges that measuring the effects wage increases have on the quality of goods and services is a challenge. Answers to questions like, "How did this restaurant experience compare to another?" or "Was this salon visit better than the last?" are hard to quantify.

But nursing homes are far different. They're held to federal reporting requirements about the status of their patients and facility conditions. Ruffini says these data are key to uncovering the relationship between wages and service quality.

During her time at the Council of Economic Advisers and the Center on Budget and Policy Priorities in Washington D.C., Ruffini observed firsthand how economics research could shape and inform public policy. The inspiration to pursue a degree in public policy came from examining research on the earned income tax credit. Not only did the tax credit increase employment and earnings, but the additional family income improved health and academic outcomes.

These indirect effects of wage and income increases prompted new questions for Ruffini. Using 25 years of nursing home reporting data alongside changes in the minimum wage, Ruffini found that having an experienced and knowledgeable caregiver can make a vital difference. As the minimum wage increases, nursing assistant pay at long-term care facilities also goes up. In turn, these caregivers are more likely to stay in their jobs for longer periods of time.

"This facility-specific expertise translates into improved outcomes for patients: fewer health inspection violations, fewer infections, and fewer deaths," Ruffini said.

For these firms, better outcomes for patients mean actual dollars saved and sometimes earned. As the quality of care increases, there are fewer patient hospitalizations and inspection violations. Residents are also more likely to live in the facility longer.

Minimum wage research has historically focused on how raises affect employees directly and on how related increased costs affect consumers. But Ruffini says there's more to learn by zooming out to take in the larger picture.

"There's pushback on minimum wage policies and income assistance policies in general," Ruffini said. "I think my work shows the overall net cost isn't as big as the gross cost would make it seem."

—Alyssa Augustine

MILENA ALMAGRO

Assistant Professor of Economics, Booth School of Business, University of Chicago (2021)

A GENTRIFIER SEEKS ANSWERS ABOUT GENTRIFICATION

When Milena Almagro began studying at New York University in 2014, she lived in Brooklyn's ultrahip Williamsburg neighborhood. Finding it too gentrified to afford, she moved to Bushwick, a less-hip adjoining neighborhood.

But Bushwick also was gentrifying. Latino families were moving out, and childless young professionals were moving in—people like her, in other words.

"I was a gentrifier," Almagro said. "Just seeing that transformation got me thinking about urban change and the welfare implications of urban change."

Almagro and her NYU colleague Tomas Dominguez-lino studied the impact and proliferation of short-term rentals, such as Airbnb. That's a disruption not unlike gentrification.

Looking at Amsterdam, Netherlands, they used detailed data to build a unique model.

Others studying the same phenomenon have only modeled housing, but Almagro also modeled businesses providing the goods and services that make neighborhoods desirable and how different demographics reacted to changes in both.

A classic example is day care centers, which serve residents, being replaced by bars, which benefit from tourism. While the model showed rents rising for residents competing with the likes of Airbnb, some suffer more because they can't afford to be close to day care providers that remain, some suffer less because they can afford it, and some not at all because, being childless, they gain more from an active nightlife.

More importantly, Almagro's model could be used to evaluate policies aimed at reducing disruption from short-term rentals. She found, for example, that higher lodging taxes weren't as effective as capping the number of nights tourists can rent a home.

More recently, interest in urban change inspired Almagro to examine why the rate New Yorkers tested positive for COVID-19 was much higher in poorer, minority neighborhoods. The greatest correlation, she found, wasn't poverty or race but certain jobs requiring more human contact, such as bus driver, where these demographics are overrepresented.

That connection between jobs and infection risks suggests that authorities could better prevent the spread of COVID-19 by giving these workers, not just health care workers, priority for protective gear and testing.

These are the kinds of practical problems that made economics an appealing field to Almagro. "Most of my research," she said, "comes from what I see in real life."

—Tu-Uyen Tran

"I was a gentrifier. Just seeing that transformation got me thinking about urban change and the welfare implications of urban change."

—Milena Almagro

2020-21 Institute Visiting Scholars

The Institute annually invites selected scholars from many disciplines to pursue research while in residence at the Minneapolis Fed.

Milena Almagro
Assistant Professor of Economics, Booth School of Business, University of Chicago (2021)

Costas Arkolakis
Professor of Economics, Yale University

Adrien Auclert
Assistant Professor of Economics, Stanford University

Zhifeng Cai
Assistant Professor of Economics, Rutgers University

Gabriella Conti
Associate Professor in Economics, University College London

Louphou Coulibaly
Assistant Professor of Economics, University of Pittsburgh

Terry-Ann Craigie
Associate Professor of Economics, Connecticut College

Matthias Doepke
HSBC Research Professor, Northwestern University

Maia Güell
Professor of Economics, University of Edinburgh

Nathaniel Hendren
Professor of Economics, Harvard University

Troup Howard
Assistant Professor of Finance, University of Utah

Sun Kyong Lee
Postdoctoral Associate, Yale University

Simon Mongey
Assistant Professor in Economics, University of Chicago

José V. Rodríguez Mora
Professor of Economics, University of Edinburgh

Krista Ruffini
Assistant Professor Public Policy, Georgetown University (2021)

Diana Van Patten
Assistant Professor of Economics, School of Management, Yale University (2021)

Fabrizio Zilibotti
Tuntex Professor of International and Development Economics, Yale University

Ariell Zimran
Assistant Professor of Economics, Vanderbilt University

CRISIS RESPONSE

Amid the COVID-19 pandemic, our economists are isolated by the virus, but joined in purpose

BY JAY WEINER

“USUALLY,” ALESSANDRA FOGLI SAID from yet another Zoom screen, “economists look at facts afterward.”

Usually.

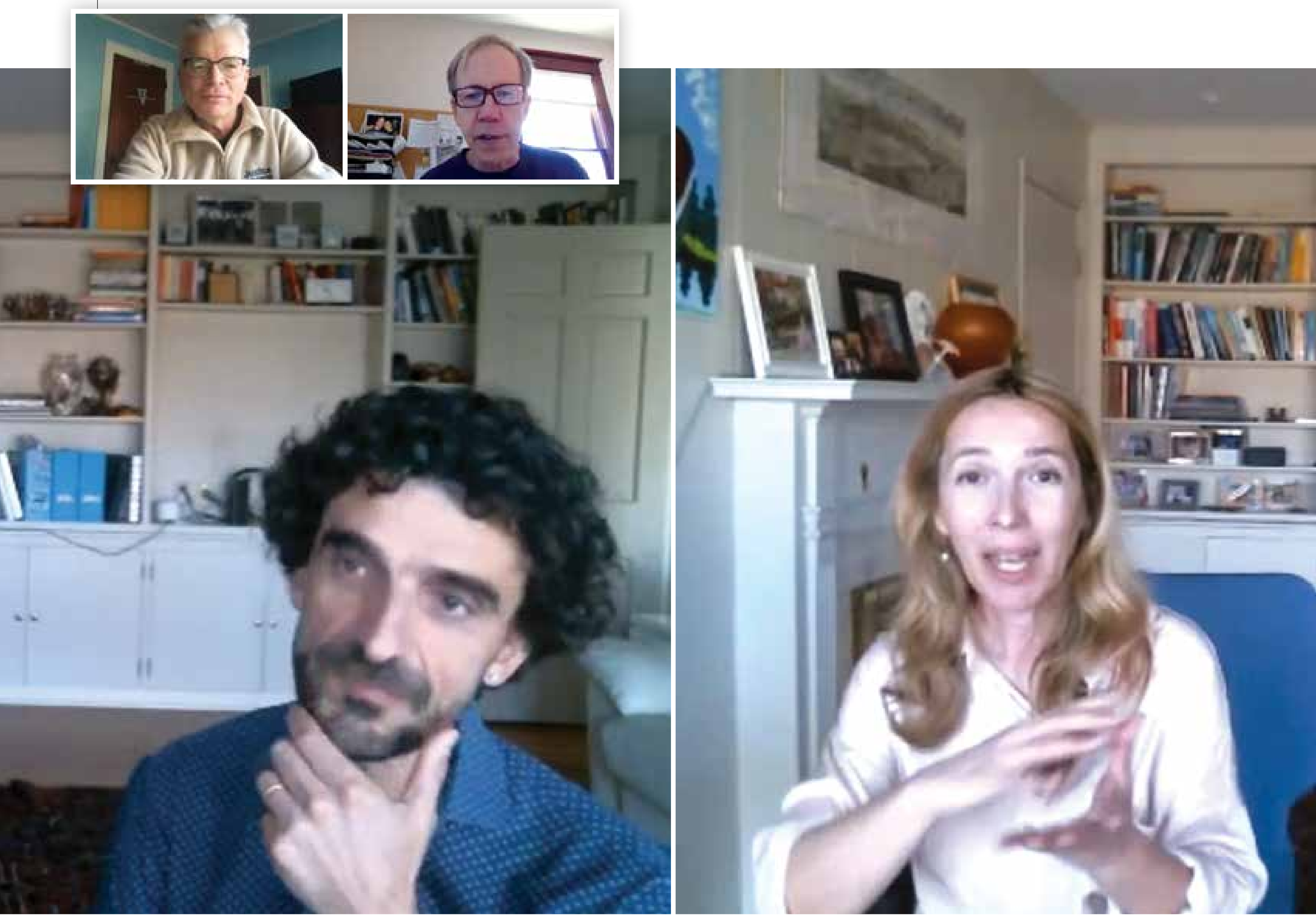
COVID-19 changed all that for Fogli, assistant director of inequality research and monetary advisor at the Minneapolis Fed, and for other Institute scholars. The crisis called for immediate response. The economists dived into real-time data, developed new models, offered fast but considered policy recommendations, and forecast short- and long-term trends.

Like many of us, Institute researchers sheltered in place, assisted children with distance learning, tired of home cooking, and worried about their aging parents. Though living in isolation, these scholars helped build a worldwide economic and public health conversation.

Quickly, urgently, they brought the Institute’s mission to life.

FOGLI WAS DOWNRIGHT PRESCIENT. More than a year before the deadly pandemic exploded in early 2020, she wrote a Federal Reserve Bank of Minneapolis staff report titled, “Germs, Social Networks, and Growth.” In it, she and

Social distancing
Story sharing came via Zoom for *For All* writers Jay Weiner and Douglas Clement and Minneapolis Fed economists Alessandra Fogli and Fabrizio Perri.



colleague Laura Veldkamp examined how interpersonal connections and social networks spread ideas and technology that help to positively transform economies.

But those same networks and connections, they wrote, also spread disease: "The bottom line is that the way in which networks affect economic growth depends on the disease environment." (See Research Digest on page 25.)

That eerie foresight laid the foundation for Fogli and her husband, fellow Minneapolis Fed economist Fabrizio Perri, to quickly develop an economic model of the social networks that can spread both disease and prosperity. This "ECON-EPI network," as they call it, analyzes connections between the coronavirus, global networks, and economic shocks. Fogli also helped organize a working group to conduct weekly Zoominars on COVID-19 economics.

More than studying COVID-19's effects, the couple lived it. "It really hit home for us," said Perri, from their suburban Minneapolis house.

Their high school freshman, Sofia, saw her gymnastics events canceled. College visits and debate competitions went virtual for Alessandro, their high school junior.

More serious were Fogli's and Perri's worries about friends and parents in their native Italy, a global epicenter of the pandemic.

"We were frightened," said Fogli, whose parents live in Bari, in southeastern Italy.

"We have really close friends who lost their parents," said Perri, whose 78-year-old mother, Fernanda, a retired emergency room physician, was nearly called back at the height of Italy's pandemic curve. It didn't come to that, but for Fogli and Perri, economic research and real life were never so clearly connected.

"The Institute has the right approach because, at times like these, we're thinking about interdisciplinary work and synergies."

Alessandra Fogli, above left, is assistant director of inequality research and monetary advisor at the Minneapolis Fed. Last spring, Fogli and husband **Fabrizio Perri**, Minneapolis Fed assistant research director and monetary advisor, conducted their research at home, alongside their son Alessandro and daughter Sofia, who took their high school classes remotely.

EVER SINCE WORKING ON HER PH.D. about the Russian banking system in the 1990s, Institute Advisory Board member Lisa Cook, an economist at Michigan State University, has thought about alternative ways for people to exchange money. Back then, Muscovites carried excessive amounts of cash, creating security concerns. Later, conducting research in inflation-burdened Nigeria, Cook witnessed shoppers carrying thousands of naira in bags.

Cook's solution was for cash to go mobile, carried in smartphones.

The research intensified when she was a member of President Barack Obama's Council of Economic Advisers. But a decade ago, cybersecurity concerns in government circles weighed heavily, and mobile money in the United States wasn't practical.

“I think we’re going to have to have a lot more mental health support.”

Lisa Cook, professor of economics and international relations at Michigan State University, relies on her considerable culinary skills to make sheltering-in-place bearable.

Times change. Apple Pay, Venmo, Zelle, and other mobile payment systems now have worldwide reach, and Cook advocates that they be used to distribute government aid in the wake of COVID-19.

Three days after the Coronavirus Aid, Relief, and Economic Security Act passed, Cook published a three-page article for the Washington Center for Equitable Growth about using mobile devices to deliver urgently needed stimulus aid.

It caught the attention of financial institutions and media. Policymakers asked for details.

Cook writes that 81 percent of Americans have smartphones that can receive and send mobile payments. People of color and those earning less than $30,000 a year rely more on their smartphones than on broadband. The 16 percent of Americans who are underbanked could especially benefit from the speed and flexibility of mobile payments. Plus, in a pandemic, where might people shelter in place? A paper check in the U.S. mail could go to their home in Pittsburgh while they’re with parents in Houston.

“We just don’t have time for checks—that’s what I was thinking when the stimulus package was passed,” she said.

She’s also advising policymakers and employers to be mindful of a traumatized labor force—a force that has gone from historically low unemployment to meteorically high unemployment in the wink of an eye, from fairly safe workplaces to those demanding distance, masks, and barriers.

“I think we’re going to have to have a lot more mental health support,” she said.

Cook was speaking from her home office in Ann Arbor, Mich., a particularly inspiring venue in quarantine. Years ago, pioneering polio virologist Jonas Salk lived in the same house.

“It’s actually comforting to know that somebody worked really hard on this right here, and a solution was found,” she said. “A vaccine was found.”

HEADPHONES ON, BLUE SKIES ABOVE, Misty Heggeness chatted from what looked like an enchanted forest. It was, instead, her faux, virtual Zoom background, replicating her actual rural Maryland surroundings. There, while helping her sixth-grade daughter and fourth-grade son with their

“Sometimes, I feel when we have these privacy discussions, we researchers do ourselves a disservice by not being vocal enough.”

Misty Heggeness is a senior advisor/research economist with the U.S. Census Bureau. She is pictured with a wall map she bought so her children, Santiago and Magdalena, could “travel” the country during their stay-at-home summer.

at-home schoolwork, the Institute visiting scholar and U.S. Census Bureau economist, produced an Institute policy brief urging government officials to upgrade data collection, storage, and use in a time of crisis.

(She also wrote a provocative Institute working paper titled, "Why Is Mommy So Stressed?" that examined the juggling act of working mothers—including herself—during the pandemic. The paper generated widespread media attention, from the *Wall Street Journal*, Bloomberg, *The Hill*, and other news outlets.)

Her call to action around data was, fundamentally, for "non-statistical agencies"—such as the National Institutes of Health or the Department of Health and Human Services, which simply gather data—to work more closely with "statistical agencies"—such as the Bureau of Labor Statistics and her own Census Bureau, which are expert in producing useful official statistics.

Heggeness recognizes the mistrust that exists when some agencies are asked to give data to another, particularly public health data. But she believes that individual privacy isn't at risk and that the reward can inform the public and policy.

"We're interested in aggregate trends; we believe in the law of large numbers," Heggeness said of economists. "We're not interested in identifying a certain Sally Jones. For us, that could easily be just Person Number Five in our data set. Sometimes, I feel when we have these privacy discussions, we researchers do ourselves a disservice by not being vocal enough."

History shows that desperate times fuel statistical innovation. It wasn't until the Great Depression, with policymakers wondering exactly how extensive unemployment was, that Census scientists began conducting a household survey to learn the depths of the Depression's impact on workers. For the first time, Census statisticians experimented with sampling that produced accurate estimates. It laid the groundwork for the long-standing Current Population Survey and some instant surveys the Census Bureau launched earlier this year as COVID-19 pummeled the U.S. economy.

Heggeness hopes that history of innovation will repeat itself in these desperate times.

INSTITUTE SENIOR SCHOLAR Aaron Sojourner knew unemployment figures were going to be bad, just not how bad. So, like most of us in search of answers, he Googled it.

His was no simple search, but a scientific approach that helped him and Yale colleague Paul Goldsmith-Pinkham create a model to accurately predict what the nation's unemployment rate would be on March 21. That's when COVID-19's initial impact generated what was, at that point, the nation's largest one-week share of unemployment insurance (UI) filings in history.

Analyzing UI claims was nothing new for Sojourner, a University of Minnesota labor economist. As the pandemic took its early toll, he believed that determining the severity of unemployment could assist policymakers in developing an assistance package for workers.

First, he pieced together official data and news reports from 35 states and the District of Columbia, which accounted for 77.5 percent of the nation's unemployment claims. But what about claims in the other 15 states? That's where Google came in.

Using Google Trends, Sojourner and Goldsmith-Pinkham looked at how many people in all states used the search term "file for unemployment." That filtered out people seeking just news and information. Sojourner discovered that search spikes for UI filings were similar across states. Knowing that, he extrapolated from the 35 states plus D.C. to forecast the total increase for all 50 states.

He had some competition in that effort.

Institute drives groundbreaking COVID survey

Institute Director Abigail Wozniak's March 26, 2020, policy brief, "Tracking COVID-19 symptoms and impact in real time: A survey-based surveillance system," was the impetus behind the COVID Impact Survey, or CIS, a real-time survey that garnered research and financial support from the Data Foundation, David & Lucile Packard Foundation, Alfred P. Sloan Foundation, NORC at the University of Chicago, and Associated Press.

Reaching a total of nearly 30,000 respondents during three weeks—one each in April, May, and June—the CIS not only was a national survey, but it also examined a wide range of issues in 10 states (California, Colorado, Florida, Louisiana, Minnesota, Missouri, Montana, New York, Oregon, and Texas) and eight metropolitan areas (Atlanta, Baltimore, Birmingham, Chicago, Cleveland, Columbus, Phoenix, and Pittsburgh). This location-specific study helped policymakers understand the specific impacts in their respective communities.

Complete results of the CIS can be found at **covid-impact.org/results**. Wozniak explains her approach to the survey in From the Director on page 1. An infographic about COVID-19's impacts, by race and ethnicity and around food insecurity, unexpected expenses, and child care, can be found in our Data Dive on page 28.

“I am interested in being in a dialogue with not just the academic economics community—which is important, of course—but also with the public.”

Aaron Sojourner, labor economist and associate professor at the University of Minnesota's Carlson School of Management, snapped a photo of himself from his desk in his living room while his daughter, an 8th grade student in Minneapolis Public Schools, does homework in the dining room.

Investment bank UBS predicted an increase of 860,000 unemployment claims, Goldman Sachs said 2.25 million new claims, and Bank of America forecast 3 million. In a blog item for the Economic Policy Institute, Sojourner and Goldsmith-Pinkham projected 3.394 million.

“We were going out on a limb,” Sojourner said, with such a high estimate.

Actually, they weren’t. When Department of Labor figures were released, the official number was 3.283 million. Pretty close.

Throughout all this, Sojourner was working in his southwest Minneapolis home with his public school teacher wife and two teenaged daughters doing their distance instructing and learning. His mother was in a nearby nursing home, where several residents had died from COVID-19. He had a lot on his mind.

His scholarship, though, was easy for non-economists to understand and available daily to his more than 9,000 Twitter followers.

“A big part of my job is to help the public understand what’s happening in the economy, help them understand what evidence is pointing to and what policy options we have,” Sojourner said. “I am interested in being in a dialogue with not just the academic economics community—which is important, of course—but also with the public.”

INSTITUTE SENIOR SCHOLAR Sophie Osotimehin felt anxious. She had nowhere to go during Montreal's strict stay-at-home orders. From long distance, she warily monitored the health of relatives in France and Nigeria. She wondered what, if anything, she could add to the proliferating COVID-19 scholarship that might make a difference.

In late March, a colleague from the French Council of Economic Analysis called, knowing Osotimehin had done research on linkages between different economic sectors. It got her thinking about the differences between "essential" and "non-essential" workers in their exposure to health and economic risks.

While many scholars were looking at the decline in the "upstream" supply of products because of shutdowns, Osotimehin decided to also examine the demand side, or the "downstream" impacts—if retail stores are shut down, for instance, how will that affect clothing manufacturers and cloth suppliers. She and her co-author, Latchezar Popov, modeled the health risk associated with maintaining essential goods and services during lockdowns and the economic risk associated with the shutdown of stores, restaurants, and retail establishments.

What they found was a remarkable cascading effect of health *and* economic risk that accounted for as much as 25 percent of total worker exposure to both. The high level of such connected risks surprised her, but also made her wonder how policymakers might intervene in the future when similar public health and economic crises spread across the economy.

What also surprised her was how quickly she could produce such a well-developed working paper—five weeks, rather than years that others have taken. "Shortest project I have ever done," she said.

Still, she wondered if too many economists have jumped on an academic bandwagon and, perhaps, over-analyzed COVID-19's effects. The pandemic cannot, should not, be economists' sole focus in the months ahead, she said.

After all, she said, "all other social and economic issues have not disappeared. We don't know what the next shock or crisis will be."

BUT WE DO KNOW THIS. The community that the Opportunity & Inclusive Growth Institute has become will clearly have a role to play in the future.

"The Institute has the right approach," said Alessandra Fogli, "because, at times like these, we're thinking about interdisciplinary work and synergies. When you specialize too much on one thing, you're vulnerable. But if you're working with people from different areas and with different expertise and backgrounds, you're better positioned to deal with something new." ★

"All other social and economic issues have not disappeared. We don't know what the next shock or crisis will be."

Sophie Ọṣọtimẹhin, below, is associate professor of economics at the Université du Québec à Montréal.

SEEING THE MARGINS

Sandra Black on education, family wealth, her time at the White House, COVID-19, and the cost of bad policy.

BY DOUGLAS CLEMENT

"Economists and policymakers need to think more about inequality; we need to think about how *everyone* is doing,"

said Sandra Black. "The timing is really right for this, and I'm very excited to be part of it."

That excitement is fueled by a remarkable range of experiences. At UCLA, at the University of Texas, Austin, and now at Columbia University, the labor economist focuses her research on racial and gender discrimination, and on early-life influences on long-term outcomes. As a scholar at the Federal Reserve Banks of New York and San Francisco, she worked on bank deregulation and gender wage gaps, and on credit card risk for blue-collar workers.

A member of the Opportunity & Inclusive Growth Institute's Advisory Board, she also served on the staff of the Council of Economic Advisers during the Obama administration, where her portfolio ranged from criminal justice to early childhood education to labor market monopsony, plus monthly labor market briefings for the president.

In the midst of the pandemic via Zoom from her New York apartment, Black answered questions from Managing Editor Douglas Clement.

THE VALUE OF BETTER SCHOOLS

I'd like to ask about your 1999 paper about the value of schools. Among other things, you found that parents put a premium on education for their kids. That's not a surprising result, of course, but it had been difficult to demonstrate statistically, and you managed to do so by looking at housing values on school district boundaries.

I was interested in education because my mom was a second-grade teacher in Los Angeles for many years. Originally, I wanted to identify the benefit to students of attending a better school. However, this is actually a very difficult question to answer, and lots of people are still working on it.

I approached it from a different perspective: Let's look at how parents value living in a house that is associated with a better school. That's an indirect value of the school—what the parents are willing to pay to have the right to send their children to a particular school. The problem is that when you buy a house, it has a whole bunch of different attributes. You're buying the school that you get to send your kids to, but you're also buying the neighborhood and the house itself and all the public amenities and all

To break out of the COVID-19 quarantine, and when rules allowed, Sandra Black, mask in hand, and her husband, Patrick Youngblood, made excursions to parks such as Sherwood Island State Park in Connecticut, an hour's drive from their home in New York City.
PATRICK YOUNGBLOOD

kinds of other things. And those things tend to be positively correlated. Better school districts tend to be in better neighborhoods with nicer houses—so isolating the part due just to schools is somewhat complicated.

But you disentangled the confounding variables by focusing on the boundaries.

What I did was look, in theory, at two houses sitting on opposite sides of the same street, where the attendance district boundary divides the street. The houses are clearly in the same neighborhood, they're of similar quality, et cetera. The only difference between them is which elementary school the child from each home attends. And then you can ask, How different are the prices of those houses, and how does that difference relate to the differences in school quality?

What I found was that parents were willing to pay more for better schools, but much less than you would casually estimate if you didn't take into account all these other factors. In Massachusetts, parents were willing to pay 2.5 percent more for a 5 percent increase in school test scores.

It was a really interesting project. I'd grown up on a street that actually separated the attendance district boundaries, so I knew these things mattered.

Read the complete Sandra Black interview at **minneapolisfed.org/for-all**

INTERGENERATIONAL WEALTH– NATURE VERSUS NURTURE

In a July 2020 paper in the *Review of Economic Studies,* you look at the correlation between parents and children in terms of wealth and other economic characteristics. You manage, again, to disentangle the impact of many confounding variables.

In a sense, you group them into nature versus nurture, and you find a powerful role for the latter in terms of intergenerational correlations in wealth—that environmental influences are more significant than biological factors.

Yes. We use Swedish data, which lets us link people across generations. So you can observe families and do a lot that is difficult to do in countries like the United States. This was work with Paul Devereux, Petter Lundborg, and Kaveh Majlesi. We were thinking about wealth inequality. That's been a really big topic these days, especially with the work by Thomas Piketty and others.

One of the reasons rising inequality is so troubling is that there is so much persistence in wealth across generations. If everyone had the chance to be at the top, having a very unequal distribution of wealth might be less troubling. But the fact that there's so much persistence across generations makes it much more worrisome.

We decided to look at what's driving the correlations we see across generations in wealth using the Swedish data. Sweden collected data on wealth because they had a wealth tax. What's unique to the Swedish data is that we can observe adopted children and, importantly, we can observe both their biological and their adopted parents. So when you observe a child's wealth as an adult, you can see how correlated it is to their adopted parents' wealth and to their biological parents' wealth. Other researchers have done this to look at things like education and income persistence. We thought it was important to look at wealth.

And, as you said, when we do that, we find that environment, or the adoptive parent, matters a lot, and more than the biological parent, unlike outcomes such as education or even income, which had more of a biological component. This is really important because it says people aren't wealthy because there's something inherently different about them that makes them better able to accumulate wealth; they're wealthy because they have these opportunities.

And adopted children "moved to better opportunities" by joining a wealthier family.

Exactly. It's about the opportunities you have growing up that make you wealthy in the long run. It's really important in today's society to think about that because the wealthy have disproportionate influence in our society. There are simply a lot of advantages to being wealthy, and the idea that it's some sort of innate skill or ability that got you there simply isn't valid. A lot of it is simply the opportunities your parents were able to provide you with. The unfairness of that seems really important.

It's interesting, too, to note that depending on the outcome you measure, you find that environment has a very different role. Education, for example, has a big biological component, as you might expect—underlying ability might matter more for education. The fact that wealth really is so disproportionately due to environment, I think, is really important.

GAINING, AND LOSING, ADMISSION TO TOP COLLEGES

In recent research, you look at outcomes for students who gained and lost access to the most selective colleges in Texas after the state adopted its Top Ten Percent (TTP) plan. You uncover something rarely seen in economics, gains in both equity and efficiency. What were your findings?

I think that's a really interesting study. I got involved in this in part because I was at the University of Texas, Austin, until recently, and we were able to get access to Texas education data. The Top Ten Percent plan was passed in 1997 in response to a court ruling that affirmative action in college admissions was no longer legal. To maintain diversity, Texas implemented this plan. The idea is that the top 10 percent of every high school in Texas would be automatically admitted to any University of Texas institution—any one of their choice.

All of a sudden, disadvantaged high schools that originally sent very few students to selective universities like the University of Texas, Austin—the state's top public university—found that their top students were now automatically admitted to UT Austin. If they wanted to go, all the student had to do was apply. There was also outreach, to make students aware of the new admissions policy. The hope was that it would maintain racial diversity because the disadvantaged high schools were disproportionately minority.

It's not obvious that the goal of maintaining diversity was realized, in part because even though a school may have a disproportionate number of minority students, its top 10 percent academically is often less racially diverse than the rest of the school. There is some debate about whether it maintained racial diversity.

What you *do* see, however, is that more students from these disadvantaged schools started to attend UT Austin. And students from the more advantaged high schools who were right below their school's top 10 percent were now less likely to attend. So there's substitution—for every student gaining admission, another loses. I think that is true in every admissions policy, but we don't always consciously weigh these trade-offs.

It's zero sum, essentially?

Yes. Here, we're trying to explicitly think about, and measure, these trade-offs. In this paper, joint with Jesse Rothstein and Jeff Denning, we show that the students who attend UT Austin as a result of the TTP plan—who wouldn't have attended UT Austin prior to the TTP plan—do better on a whole range of outcomes. They're more likely to get a college degree. They earn higher salaries later on. It has a positive impact on them.

But what was *really* interesting is that the students who are pushed out—that's how we referred to them—didn't really suffer as a result of the policy. These students would probably have attended UT Austin before the TTP plan. But now, because they were not in the top 10 percent [of their traditional "feeder" school], they got pushed out of the top Texas schools like UT Austin. We see that those students attend a slightly less prestigious college, in the sense that they're not going to UT

Austin, the flagship university. But they'll go to another four-year college, and they're really not hurt. They're still graduating, and they're getting similar earnings after college.

So the students who weren't attending college before [because they didn't attend a traditional feeder school] now are, and they're benefiting from that in terms of graduation rates and income, while the ones who lose out by not going to Texas' top university aren't really hurt that much. It seems like a win-win.

It strikes me that here again, as in your study on the value of schools, you're dealing with kids on the margin.

Economists are always thinking about the margins!

COUNCIL OF ECONOMIC ADVISERS

You worked for about a year and a half on the Council of Economic Advisers. What issues did you work on?

In 2015, I was asked to be a member of Obama's Council of Economic Advisers. It was not something I thought I would ever do, but it was such a great opportunity that I couldn't say no. I got to work on a lot of really important issues. A great thing about working for the government—particularly in that capacity—is you feel like what you do every day really matters; whereas, in academia, a lot of our time is spent investing in long-run projects. In D.C., it felt like whatever we were talking about today could be happening tomorrow, so it felt really relevant and important.

My portfolio was labor economics broadly defined. One of my responsibilities was briefing the president on the jobs and unemployment numbers that come out once a month—I would go with Jason Furman, the chair of the Council of Economic Advisers, to brief President Obama before the numbers came out on the first Friday of each month.

Sandra Black explains the role of the Council of Economic Advisers to a gathering of White House visitors in 2016. The CEA advises the president on economic policy and provides empirical research.
TAMZIN B. SMITH

THE INSTITUTE

You recently joined the Institute as an advisor. What do you see as the Institute's role in efforts to provide greater opportunities and more economic inclusion?

I really like what the Institute is doing. I met Abbie Wozniak years ago and, like me, she also worked at the Council of Economic Advisers. I was so excited when I found out she was moving from Notre Dame to lead this group.

People are becoming much more open to this idea of inclusive growth—the idea that GDP is not a sufficient statistic for how our society is doing. People—and, by that, I mean economists and policymakers—need to think more about inequality; we need to think about how *everyone* is doing.

The timing is really right for this. The movement needs some leadership, and it's a hard thing for academics to do because we are so isolated. I think it's important to have this type of organization where people who are all interested in the same issue can present their ideas and know that there is an audience for it. I'm very excited to be part of it. And I think the reaction to it has been really outstanding. It's been very well-received by scholars and policy people.

THE PANDEMIC

How is the pandemic shaping your research? And what impact do you see it having on economics as a profession?

For me personally, being in New York City, it reinforces my concerns about our society. It highlights the importance of the Institute's work. We need to pay more attention to understanding how our society is failing so many of its members. To me, the pandemic has heightened all my fears about unfairness and inequality in our society.

We see the disproportionate impact of the pandemic on low-skilled workers. We call them essential workers, but we don't offer them sick days, and there are very few protections for many of them.

The fact that many of them don't have health insurance reinforces the importance of making sure that everyone has health care—not simply access, but actual health care. It makes sense from a cost perspective, but also from an equity perspective. It's part of what makes a functioning and equitable society.

The pandemic has been really hard to watch, but I'm very aware that I'm lucky because I'm watching it more than I am experiencing it. I'm grateful for that, but watching how things are unfolding is so disheartening. It makes me all the more committed to doing good research and thinking about how research can effect change in society.

How do you think it will change the profession?

I'm not in a hopeful mood right now. I have a very hard time following the news these days. I just find it so upsetting. I don't know how, as a society, we are letting these things happen. And I feel powerless.

I guess I hope that it will change the profession in that people become more aware of how costly bad policy can be.

That would be my hope, that we will learn. ★

A Teachable Moment?

WILL GEORGE FLOYD'S DEATH SPUR CHANGE IN ECONOMICS?

On May 25, 2020, George Floyd was killed by a Minneapolis police officer about four miles south of the Federal Reserve Bank of Minneapolis, home to the Institute. Days later, Howard University Professor William Spriggs, a

member of our Advisory Board, wrote an open letter to economists. We urge you to read the full letter on our website. Here are excerpts from it.

I have been warmed by the opening of the hearts of some economists who have displayed a new, and renewed, sense of angst about the racial issues our nation confronts because recent events have moved them. Watching the gut-wrenching brutal murder of George Floyd has gotten them to think about the bigger issue of what is really wrong, because their training as economists has let them silently accept lots of "givens" they now understand should not be presumed, and that "givens" do, in fact, matter. Having come to the realization that one cannot simply assume that all police are there to serve and protect. Watching the other three police officers sit by and do nothing about the murder means you have to question other assumptions too. But I am not sure if this moment has gotten to economists enough to see their role as economists in perpetuating the very things they wish to recoil from.

Modern economics has a deep and painful set of roots that too few economists acknowledge. The founding leadership of the American Economic Association deeply and fervently provided "scientific" succor (1) to the American eugenics movement (2). Their concept of race and human interaction was based on the "racial" superiority of White, Anglo-Saxon Protestants. And they launched modern economics with a definition of race that fully incorporated the assumed superiority of that group and bought into a notion of race as an exogenous variable. ...

In the hands of far too many economists, it remains with the assumption that African Americans are inferior until proven otherwise. And, in this regard, it places economists alone outside the mainstream of all other American social sciences. It is the constant micro-aggression that African American economists endure at every meeting, and in reading every paper, and in reading every reviewer's comments. ...

Economists play a key role in shaping policy. We are viewed as the objective scientists, with the tools to identify solutions; presumably absent "passion." But if you start with a model that has race as exogenous, racial differences cannot be objectively approached. The model begins with a fallacy that assumes racial differences as a natural order. It biases the model, because there is a built-in excuse for disparities that cannot be solved. And, invariably, in the overwhelming case of economic analysis, assumes that there is something "deficient" about Black people.

Hopefully, more economists will accept the ugly reality that passively accepting that view leads to the ugly incidents of police misconduct we all observed. It is a form of "othering" that reduces the pain inflicted on someone because of decisions that are made. And it excuses the decision maker from responsibility at best or absolves them of guilt for the consequences at worst. ...

Hopefully, this moment will cause economists to reflect and rethink how we study racial disparities. Trapped in the dominant conversation, far too often African American economists find themselves having to prove (3) that African Americans are equal. We find ourselves, as so often happens in these ugly police cases, having to prove that acts of discrimination are exactly that—discrimination. Instead, to be heard, we must start with, "The victim was unarmed." We find ourselves constantly facing, "You didn't see the complete video. There is some context or pretext you missed that justified this police action." In our case as economists, we find that there is some missing variable you omitted that surely justifies the unequal outcome experienced by African American workers, home loan applicants, or students.

In the following notes, Spriggs cites seminal articles by leading economic scholars. Links to the full texts can be found on the *For All* website.

1) Spriggs directs us to a 1994 article by William "Sandy" Darity Jr., "Many Roads to Extinction: Early AEA Economists and the Black Disappearance Hypothesis." Darity is cited repeatedly in this open letter.

2) In 2009, Thomas C. Leonard wrote "American Economic Reform in the Progressive Era: Its Foundational Beliefs and Their Relation to Eugenics."

3) "Black and non-black scholars do see the world differently." That's what Darity, Patrick L. Mason, and Samuel L. Myers wrote in 2005 in "Is There Racism in Economic Research?"

"I hope we will not chase endlessly for the right instrument to identify some narrow policy goal that on the margin might lift wages by two percent, all else equal, but again ask the big questions about understanding the institutions that created our massive inequality."

"Trapped in the dominant conversation, far too often African American economists find themselves having to prove that African Americans are equal."

To far too many African American economists, it looks like economists are desperate for a "Great White Hope," some variable that can be used to once and for all justify racial disparities. Of course, for the dominant view in economics, that has become test scores and measures of cognitive ability. I, for one, am constantly irritated by the total ignorance of economists to what William Rodgers and I wrote (4) to show how absurdly weak that evidence is. And then the work (5) by William Darity (6), Arthur Goldsmith, and Jonathan Veum to show that, in fact, there are positive things correlated to being African American, and when those things are considered, the test score explanation totally falls apart. And work by Patrick Mason (7) to show similar weak results, and then my list will grow longer. But that would require economists to actually read what Black economists write—which exceedingly few White economists do. …

Going forward, I hope that we will join other social sciences and accept that race is a social construct. The purpose of the construct is to have a dominant group designate a group to receive less of the goods of society. We will see economists accept that America did have residential segregation covenants written into deeds; accept that America created legally separated schools and segregated use of public facilities not out of a benign "separate but equal," but a deliberate "separate and unequal" vision. …

We will get far better policy. We will no longer look for marginal policies to create change, because we know that we will be skirting the real issues… Assuming Black inferiority has made all that bad policy possible because it has blinded economists to the agency of African Americans to push ahead and survive despite the systemic issues. …

I hope we economists will focus on how we achieve systemic change. And we will have a better discipline for it. We should see, not just in understanding the brutal murder of George Floyd, that marginal changes like two more hours of sensitivity training for police will not bring justice; but in this brutal economy flat on its back, that marginal analysis will not restore economic balance and performance. I hope we will not chase endlessly for the right instrument to identify some narrow policy goal that on the margin might lift wages by 2 percent, all else equal, but again ask the big questions about understanding the institutions that created our massive inequality. ★

For William Spriggs' full letter and citation links, go to **minneapolisfed.org/for-all.**

The views expressed here are those of the author, not necessarily those of the Opportunity & Inclusive Growth Institute, the Federal Reserve Bank of Minneapolis, or the Federal Reserve System.

4) Spriggs is referring to a 1996 article that he wrote with William Rodgers vigorously challenging the value of the Armed Forces Qualification Test in *The Review of Black Political Economy.*

5) This is a nod to an article from Darity, Arthur Goldsmith, and Jonathan Veum titled "Race, Cognitive Skills, Psychological Capital and Wages."

6) Don't miss Managing Editor Douglas Clement's wide-ranging interview with Darity, which we link to on the *For All* web page. Doug has another in-depth interview that dives into race issues with Institute Advisory Board member Lisa Cook.

7) More about the Black-White wage gap, from 22 years ago, by Mason: "Race, Cognitive Ability, and Wage Inequality."

World-class research can be lengthy and complex. Here, we present the key findings, methods, and policy implications of two pandemic studies by Opportunity & Inclusive Growth Institute scholars and their colleagues. These examples represent a fraction of the Institute's growing body of work. For our full library of working papers and staff reports, visit minneapolisfed.org/institute/publications.

ILLUSTRATIONS BY DIANA EJAITA

For Workers, a Cascade of Risk

COVID-19 has inflicted hardships on workers both directly and indirectly.

BY SOPHIE ỌṢỌTIMẸHIN AND LATCHEZAR POPOV

How do workers vary in their exposure to both health and economic consequences of the COVID-19 pandemic? Answering that question involves understanding not only how sectors vary in their *direct* exposure to both types of disruption but also in their *indirect* exposure, through supply chains and demand linkages—the intricate network that constitutes the macroeconomy.

In our research (Institute Working Paper 31), we explore how worker exposure to health and economic risk varies across sectors and find that indirect exposure is a significant component of total risk.

How exposure varies

To slow the spread of the COVID-19 pandemic, governments have required social distancing measures that disrupt economic activity, depriving workers in many sectors of jobs and income. Some economic activities have been deemed essential, however, and workers in these sectors face higher *health* risk than others if they cannot work from home.

Workers in non-essential sectors whose activity requires social contact with the public face direct and disproportionate *economic* risk because their jobs are soonest to close and slowest to return to normal.

We term these "social-consumption" sectors.

Workers in still other sectors experience disproportionate risk if their work is connected indirectly, through supply chains and demand links to essential and social-consumption sectors.

Indirect effects also stem from demand linkages caused by complementarities in household consumption. A key complementarity is that between retail trade and the purchase of manufactured goods. Someone shopping for shoes, for example, might normally buy them at a retail shop. But if such businesses are closed, the shoe factory will suffer.

To measure these links, we use the value of each sector's purchases from every other sector. We also use data on retail, wholesale, and transportation services involved when households purchase manufactured products.

Measuring risk

Our measure of *health* risk is the proportion of each sector's employment before the pandemic that is still needed at the workplace to meet demand for essential goods and services during the pandemic. Our *economic*-risk measure is the proportion of each sector's employment no longer needed after household demand for social-consumption services drops by 90 percent.

These simple measures neglect important aspects of risk, but nonetheless reveal a very stark picture of disparity in exposure.

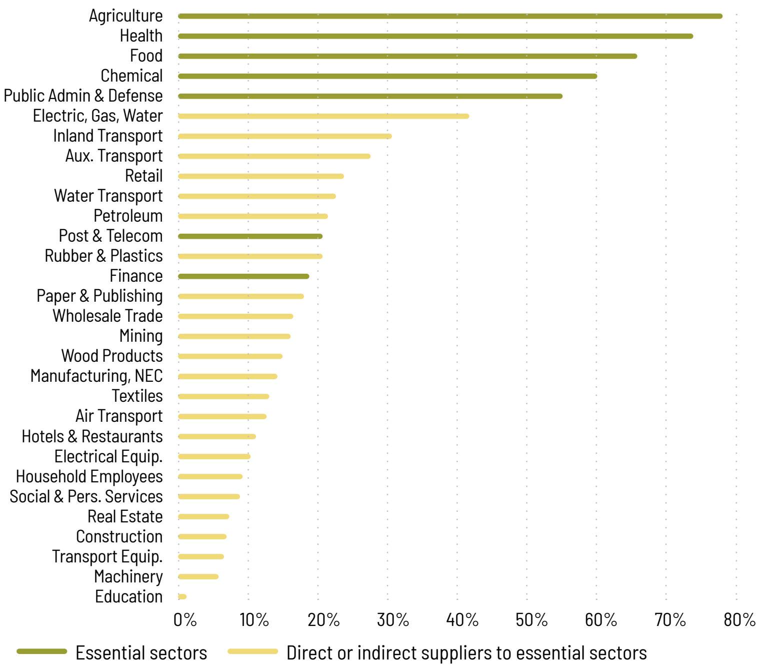
Health risk exposure

We estimate that 29 percent of U.S. workers are disproportionately exposed to health risk during a pandemic. About a quarter of these workers are in non-essential sectors and affected indirectly.

STUDY AUTHORS

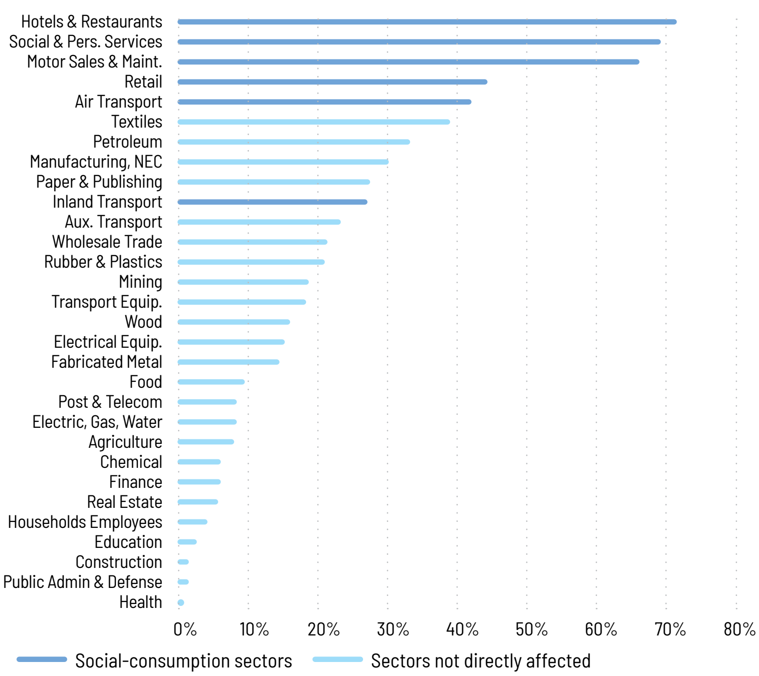
SOPHIE OṢỌTIMẸHIN is an associate professor of economics at the Université du Québec à Montréal and an Institute senior scholar. LATCHEZAR POPOV is an assistant professor of economics at Texas Tech University.

1: Health risk from providing essential goods and services, by sector



Health risk is measured as proportion of sector's workers needed who cannot work from home.

2: Economic risk from collapse of demand for social consumption, by sector



Economic risk is defined as decline in employment following a 90 percent reduction in household demand for social consumption.

Health care workers account for 9.1 percent of overall health risk, closely followed by public service employees (8.7 percent) and by workers in indirectly exposed sectors (7.7 percent).

A closer look (Figure 1) shows that, as expected, health risk is highest in three sectors providing essential goods and services: agriculture, health care, and food. Figure 1 also shows the cascade effects from supply chains and demand linkages.

Economic risk exposure

We estimate that 21 percent of U.S. workers are disproportionately exposed to economic risk caused by collapse in household demand for social consumption. Indirect effects are substantial—more than a quarter of these workers are in sectors not directly impacted, but exposed through supply and demand linkages.

A sector-by-sector breakdown shows that 6 percentage points of economic risk are due to the sectors linked to social-consumption sectors (Figure 2).

The strongest cascade effects are felt by the textile and petroleum industries. Demand for these two sectors collapses because of demand links with retail. Demand links hence play a central role in indirect exposure to economic risk.

Indirect exposure? Substantial

The data thus indicate that workers face disparate exposure to health and economic risks from the COVID-19 pandemic. While the greater part of this is felt directly, a substantial portion is indirect, cascading to other sectors through supply chains and demand links. To fully understand the distributional consequences of alternative policies, one must therefore take into account both forms of risk, and indirect as well as direct exposure to those risks. ★

This is a condensed version of an Institute policy brief, published May 13, 2020, at **minneapolisfed.org/institute**.

TAKEAWAYS

- During COVID-19, health and economic risks cascade from essential and social-consumption sectors into other sectors
- Nearly a third of U.S. workers disproportionately exposed to *health* risk, one-quarter of them indirectly, in non-essential sectors
- About 20 percent of workers exposed to *economic* risk from collapse in social consumption, more than one-quarter of them through indirect linkages

Growth, Disease, and the Personal Touch

"The diffusion of an innovation becomes a process formally akin to the spread of an infectious disease."
—Nobel Laureate Kenneth Arrow

Well before COVID-19 appeared, the Institute's Alessandra Fogli and co-author Laura Veldkamp foresaw its impact, showing how the networks that fuel economic growth also spread pathogens

BY DOUGLAS CLEMENT

If we've learned nothing else from social media, it's that networks transmit both good and evil. Social networks play a similarly ambivalent role in economics. By spreading ideas and technology, networks help transform economies from subsistence to prosperity. But social connections also spread disease, from the common cold to endemic Ebola.

The interactions of illness, income, innovation, and networks are multidirectional. Technology can protect and cure with better drugs and medical devices. Widespread disease lowers economic growth by impairing productivity. Networks are themselves shaped by technology and disease. They grow through new methods of transportation and communication. But to survive contagion, societies may restrict networks to curtail disease transmission—quarantine is a stark example.

Understanding how networks affect technological progress and economic growth is thus an intricate puzzle, beset by the challenges of reverse causality. But "Germs, Social Networks, and Growth," a prescient staff report (SR572) published in November 2018

"Changing a nation's social network can raise its productivity by as much as 100 percent. But in a high-disease environment, growth will be undercut by a parallel propagation of disease."

by Alessandra Fogli, assistant director of inequality research and monetary advisor at the Minneapolis Fed, and Laura Veldkamp of Columbia University, provided an elegant solution. The economists disentangle disease, development, and demographics and provide an elegant model that quantifies the effect of networks on national income, but also explains why societies embrace growth-inhibiting structures.

Their model shows that small initial differences in a nation's epidemiological environment—disease rates or contagion capacity—can result in large and persistent differences in network structure that, in turn, generate very different levels of technological diffusion and economic output. Changing a nation's social network can raise its productivity and growth by as much as 100 percent, according to their estimates. But if done in a high-disease environment, growth will be undercut by a parallel propagation of disease.

"In general, social networks have evolved to fit their economic and epidemiological environment," write Fogli and Veldkamp. "Trying to change networks in one country to mimic those in a higher-income country may well be counterproductive."

An evolutionary model

The core of their research is a model of network diffusion, a framework that enables them to measure the effect of networks on growth. Social networks have myriad dimensions; the economists focus on those that are measurable and that mediate technology diffusion, but also respond to disease. In this model, networks govern the spread of disease and technology but, inversely, disease and technology influence network evolution.

The model's key explanatory variables, then, are disease prevalence, technology adoption, and network diffusion. National data for communicable disease prevalence are relatively easy to obtain. Measures of technology adoption are also available. A metric for social networks is more problematic. The economists develop an index from three elements: *mobility*, quantity of social ties in distance locations; *degree*, number of close personal connections; and *individualism/collectivism*, a society's level of clustering. Are personal connections shared or independent? Do friends tend to have a mutual friend?

Assembling data on these variables for 71 countries and calibrating the model, Fogli and Veldkamp measure the relationship between network diffusion and national income. They find, as expected, a very high correlation. "The forces of the model can jointly explain large differences in income across countries," they write.

STUDY AUTHORS

ALESSANDRA FOGLI is assistant director of inequality research and monetary advisor at the Minneapolis Fed. LAURA VELDKAMP is the Leon G. Cooperman professor of finance and economics at Columbia University's Graduate School of Business.

> "To thrive, each country needs a social network adapted to its environment."

A "policy experiment"

But the tight correlation of diffusion and income could be due to other factors—in particular, the impact of disease on both. To isolate the *causal* role of network diffusiveness, the economists try, in essence, a policy experiment: Hold the disease environment constant, vary the level of network diffusion, and see what happens to economic growth. (All experiments include two feedback effects: on innovation as infection rates rise and on infection probability as technology improves.)

Their benchmark is the United States, which has very low disease prevalence (0.05 percent for communicable diseases). In this environment, they find, high-diffusion networks have a strongly positive impact on economic growth. Doubling the number of highly mobile or connected individuals raises growth rates substantially.

But in a *high*-disease environment (using Ghana's 18 percent prevalence), altering the social network to facilitate faster diffusion lowers national income. Doubling the number of highly connected individuals causes output to fall by 90 percent.

"The bottom line is that the way in which networks affect economic growth depends on the disease environment," write the economists. High-diffusion networks spread pathogens and impoverish nations in which disease is prevalent. In low-disease nations, diffuse networks have fewer pathogens to spread. Ideas go viral, not germs. "The same networks that impoverish poor countries can facilitate growth in rich ones where epidemics are rare. To thrive, each country needs a social network that is well adapted to its environment."

Network origins

Fogli and Veldkamp's primary query is, as they put it, "about the effect, not the origin, of networks." But understanding how networks emerge and evolve in response to disease is key to appreciating why modifying networks can be dangerous. In a separate exercise, the economists therefore run multiperiod simulations of two identical economies that vary only in their initial rates of disease prevalence.

In low-disease environments, the simulations generate high-diffusion networks because individuals who are connected, independent, and mobile prosper. They're exposed to more new ideas and enjoy higher income and greater rates of reproduction. "In low-disease environments, high-diffusion network characteristics thrive."

But in high-disease environments, the opposite happens—people with more friends, greater mobility, and higher independence get sick quickly. "They may also get new ideas," observe Fogli and Veldkamp. But if they're sick, they are "unproductive, regardless of [their] technology. One has to be alive and well to be productive."

So, again, when disease is common, altering networks can be a bad idea: "Changing the network without changing the disease environment can be disastrous. A high-diffusion network, in a place where disease is prevalent, is a recipe for epidemics and humanitarian crisis."

Confirmation from a second method

The economists test findings from their model by using a second method, a technique called "instrumental variable estimation." It employs regression analysis with variables that are related to networks, disease, technology, and growth, but don't suffer the reverse causality inherent to their model. With data on nine communicable diseases in 160 countries, they measure the difference in prevalence of diseases transmitted by humans and those spread by animals. These illnesses have similar impact on technology diffusion, but they differ in relation to social networks, so reverse causality is not an issue.

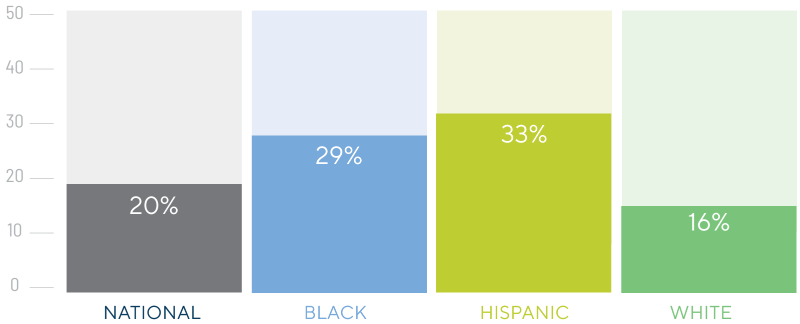
The test confirms the initial findings. Results from the full set of countries show that increasing the network diffusion level strongly increases worker productivity and per capita GDP. But splitting the sample between high-disease and low-disease countries "suggests a more subtle message that echoes the results of the model," observe Fogli and Veldkamp. As their main method indicated, network effects differ. "The positive effect of social networks only appears for the low-disease prevalence countries." Thus, policies to implement high-diffusion social networks would be ill-advised in nations where communicable diseases are common. ★

TAKEAWAYS ↗↗

- Social networks spur economic growth, but also spread disease
- When societies restrict networks to curb contagion, they slow growth
- High-diffusion networks ill-advised where communicable disease is prevalent

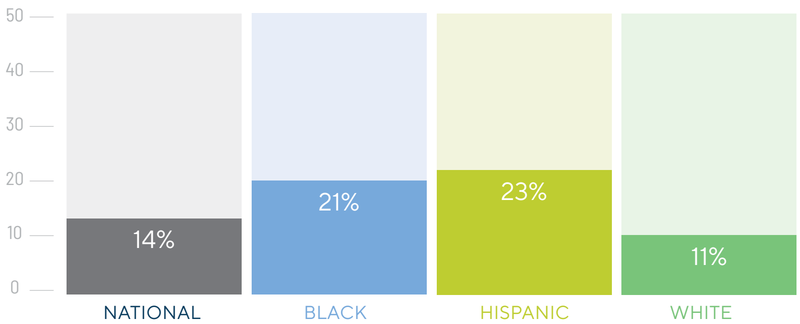
A NATION DIVIDED

COVID-19 and its economic shocks have devastated the entire United States, and communities of color have fared worst. Disparities are evident geographically, too, with some states and metropolitan areas suffering more than others. The COVID Impact Survey (CIS), conceived by Institute Director Abigail Wozniak and co-sponsored by the Minneapolis Fed, identified these dramatic racial and geographic gaps. Details below are from the May 30–June 8 CIS wave.



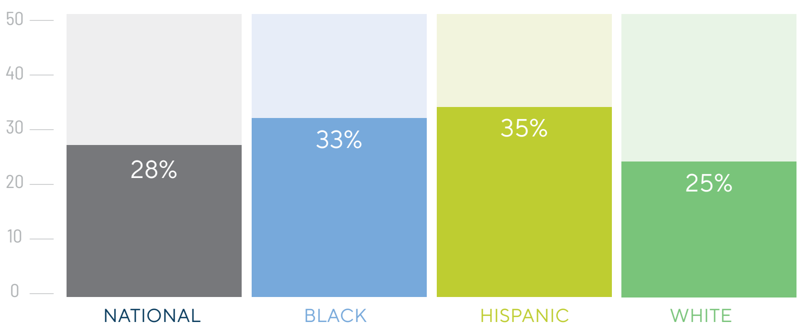
RUNNING OUT OF FOOD WITHOUT MONEY TO BUY MORE

Percentage reflects respondents who answered "often true" or "sometimes true."



UNABLE TO PAY $400 EMERGENCY EXPENSE

Percentage reflects respondents who answered affirmatively.



PRE-K & CHILDCARE CLOSURES AFFECTED PLANS

Percentage reflects respondents who answered affirmatively.

CALIFORNIA

→ Acute demand has put an unprecedented strain on food banks. In California, more than 20 percent of the state's adult population, or **nearly 6.5 million people, have experienced food insecurity** since the onset of COVID-19.

LOUISIANA

→ If hit by a financial emergency, more than 1 million adults in Louisiana said they couldn't cover a $400 expense by any means. With **30 percent of its adults experiencing extreme economic hardship**, Louisiana is one of the hardest hit states in the CIS.

MINNESOTA

→ **37% of Minnesotans have had their personal plans changed** by the closure of pre-K and child care, some of the highest closure impact rates found in the CIS.

For more on the COVID Impact Survey, see Wozniak's paper, "Disparities and Mitigation Behavior during COVID-19" at **minneapolisfed.org.** The national survey of 2,047 adults was conducted May 30–June 8 using a sample drawn from NORC's probability-based AmeriSpeak Panel, which is designed to be representative of the U.S. population. The margin of sampling error for all respondents is plus or minus 3 percentage points. State-specific figures have higher margins of error.

Source: COVID Impact Survey. Find more details, including sample sizes and margin of error for individual states and metro areas, at **covid-impact.org.**

FEDERAL RESERVE BANK OF MINNEAPOLIS

The Federal Reserve Bank of Minneapolis is home to the Opportunity & Inclusive Growth Institute and *For All* magazine. The Minneapolis Fed has a long history of research designed to inform policymakers. Some of the hallmark policy initiatives driven by pioneering research is work around banks that are too big to fail and the powerful return on public investment in early childhood education. One of 12 Federal Reserve Banks, the Minneapolis Fed monitors the Federal Reserve's Ninth District economy to help determine the nation's monetary policy and strives to promote economic well-being.

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CHANGE SERVICE REQUESTED

FINAL THOUGHT

"COVID-19 acutely targets the most vulnerable and lowest-income Americans. That is what is so devastatingly unfair about this virus."

Minneapolis Fed president and Institute founder **Neel Kashkari**, speaking to the Economic Club of Minnesota. Go to Data Dive on page 28 to see how unfair.