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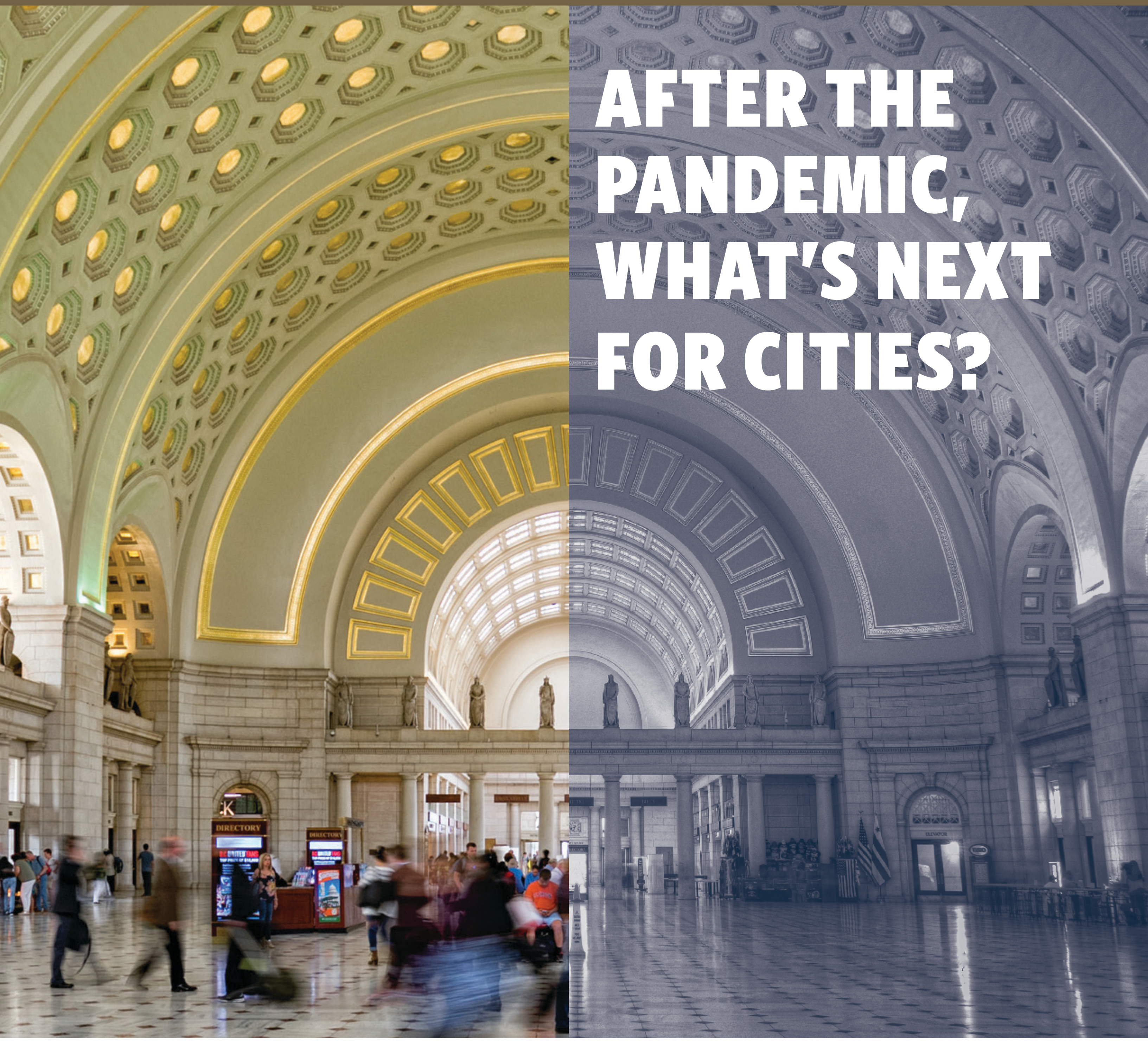

AFTER THE PANDEMIC, WHAT'S NEXT FOR CITIES?

The Fed's New Framework

Financial Repression

Matthew Jackson on Human Networks

VOLUME 26 ■ NUMBER 1
FIRST QUARTER 2021

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FEATURES

DEPARTMENTS

We hope you enjoy the newly redesigned Econ Focus!
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On Remote Work, Markets Will Decide

Our cover story in this issue looks at the economics of cities and what the pandemic means for their future. How much reshuffling of businesses and residents will we see among cities, suburbs, and rural areas? The answer will have important implications for local economies.

Preferences will surely be quite varied. Some customers will value a return to in-person relationship building; others won't, having developed an appreciation of the efficiency of remote interactions. Some employers will want to bring their people back into the office, to invest in workplace intangibles like cultures, mentoring relationships, and collaboration. Others won't, perhaps believing they can operate comparably through technology, or putting more weight on potential rental cost savings. Some workers will want to return to the office and to business travel, valuing the resulting relationships and experiences. Others won't, placing more value on the lack of a commute and/or the flexibility of a somewhat less structured workday at home. And of course, there will be many gradations in these preferences.

This range of preferences makes forecasting difficult. Many are predicting the emergence of a new way of operating that combines remote and on-site activity, and indeed, most employers are exploring some version of this hybrid model. (I offered some thoughts about making this work in "The Future 'Hybrid' Office" on our website.) I think it would be more accurate, however, to call this a "holding-pattern hybrid": a placeholder for companies as they test what works in the marketplace.

That's because the geographic work options available in the post-pandemic world have to meet the market test. New models have the potential to

redefine the basis of competition. Some will win and some won't. The answer may well differ by industry and customer segment. But, to date, most of these models have been tested only in an artificially constrained environment — one where all players were forced into being remote. Until the markets have their say when the environment becomes unconstrained, it's fair to say we won't know how the geographic reshuffling will play out.

Customers will have their say. Companies will need to determine what in-person activities their customers now value: Sales calls? Conferences? Relationship-building dinners? If your competitors are investing in these and winning, how will you react? If you are losing to a lower-cost remote competitor, how will you react?

Competitors will have their say. Companies will need to test their assumptions about the importance of and process for building workplace intangibles. How much or little needs to happen in person to develop culture, build relationships, foster innovation, and integrate new hires? How much do these intangibles help differentiate the company in the marketplace versus competitors who do less and potentially spend less?

Talent will have its say. Will these investments in workplace intangibles help attract and retain necessary talent, or will the talent needed to win prefer a different, more remote model? And that remote model could well extend far beyond the company's geographic base, potentially creating new talent hubs distant from corporate hubs.

Employers will have their say. Workers, too, are ultimately in competition with one another. Those who prefer working from home will need to test themselves on whether a long-term remote model enhances or diminishes their appeal in the job market. Will they have enough access to mentors within their company? Will they be able to build broad enough relationship networks outside their company? Will they be able to connect to others doing "leading edge" work who can improve their capabilities? Will their careers develop at the same pace? And are they now more available to attractive out-of-geography employers or more vulnerable to lower-cost out-of-geography workers?

For the past year, remote models haven't faced in-person competition in many industries. As a result, those predicting the future of work have been missing a key input: the voice of the market. As businesses and talent explore new models, that voice will matter a lot, for them and for their communities.

Thanks, and enjoy the issue. **EF**

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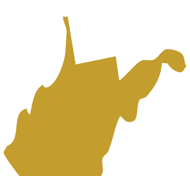
UPFRONT

BY KATRINA MULLEN

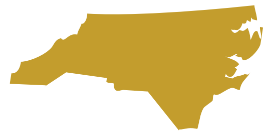
Regional News at a Glance

MARYLAND In February, Gov. Larry Hogan and the Office of Rural Broadband launched SpeedSurvey, a website for residents to test internet speed or report service issues such as an inability to access internet from local providers. While Maryland ranks third in the nation for broadband access, some residents, particularly in low-income and rural areas, still face slow internet speeds, no internet, or access to only one provider. (See "Closing the Digital Divide," *Econ Focus*, Second/Third Quarter 2020.) The website will also allow the state to collect data and generate federal funding for future projects.

SOUTH CAROLINA BMW Manufacturing will expand its campus with the addition of a 67,000-square-foot training center, which broke ground in February. Located in Greer, the center will focus on workforce recruiting and training and will include classrooms, an outdoor amphitheater, and an outdoor meeting space. This $20 million investment is part of BMW's $200 million plan to attract and retain workers as the automotive industry continues to evolve. The center is expected to be completed in summer 2022 and will provide numerous training opportunities, including within the BMW apprenticeship program, BMW Scholars.



WEST VIRGINIA In early March, Sens. Shelley Moore Capito, R-W.Va., and Joe Manchin, D-W.Va., announced that the U.S. Economic Development Administration had awarded the Natural Capital Investment Fund (NCIFund) a $1.5 million CARES Act Recovery Assistance Grant. The federal grant will allow the Charles Town-based NCIFund to establish an Emergency Response Loan Fund to support businesses affected by the COVID-19 pandemic. The NCIFund will also use the grant for existing programs and additional services for businesses.



NORTH CAROLINA Raleigh-Durham International Airport (RDU) recently announced a one-year partnership with Smartvel, a Spanish business-to-business software company that supports the travel industry. The partnership, which began in early March, will provide travelers with an interactive map on the airport's website that shows COVID-19-related information on testing, quarantining, and socializing for all 50 U.S. states and select international destinations. RDU will become the first airport to include Smartvel's information on its website in an effort to increase travel through the area and deliver up-to-date resources.

VIRGINIA In June, the Virginia Department of Education, in collaboration with researchers from the University of Virginia, will embark on a three-year project called "Equity in Virginia's Public Education System: A Longitudinal Examination Spanning the COVID-19 Shutdown." The project, which received nearly $1 million from the U.S. Department of Education's Institute of Education Sciences, will focus on equitable access and will measure how the pandemic has affected students and teachers, including pre- and post-pandemic trends related to attendance, retention, and mobility through the 2022-2023 school year. When the project concludes in May 2024, researchers hope to identify future policies that could help schools recover from COVID-19 disruptions at state and local levels.

WASHINGTON, D.C. To increase minority representation in leadership and executive roles in the hospitality industry, the J. Willard and Alice S. Marriott Foundation donated $20 million to Howard University in February to establish the Marriott-Sorenson Center for Hospitality Leadership. The center will provide students with career development and mentorship opportunities through the $1 million Arne M. Sorenson Hospitality Fund, newly created by Marriott International. Separately, the foundation funded $500,000 in scholarships awarded to hospitality students nationwide by the American Hotel and Lodging Foundation.

IMAGES COURTESY: BMW MANUFACTURING CO. AND THE RALEIGH-DURHAM AIRPORT AUTHORITY

BY HAILEY PHELPS

Investment Connection

With its Investment Connection program, the Richmond Fed matches nonprofits and other community and economic development organizations with banks and other financial institutions, similar in concept to the television show "Shark Tank." Investment Connection brings organizations and bankers together by hosting in-person and virtual events where community-based organizations pitch eligible project ideas to financial institutions and other funders seeking to invest in the region. Investment Connection also provides an online portal where funders can look at proposals, filtering them by geography, type of project, or type of investment.

Within the Federal Reserve System, the regional Reserve Banks work with both community development groups and financial institutions, so they are positioned to bring banks together with nonprofits and other community and economic development organizations. The Kansas City Fed piloted the Investment Connection program in 2011. Since then, five other Reserve Banks, including the Richmond Fed, have launched Investment Connection programs. Investment Connection in the Fifth District began in 2019 and currently operates in Maryland, North Carolina, Virginia, Washington, D.C., and West Virginia; later this year, the program will expand into South Carolina.

The first step for organizations to become involved in Investment Connection is to submit a proposal, which must fall into at least one of the following categories: affordable housing, economic and workforce development, financial access and empowerment, small business and small farm technical assistance and development, community facilities and services, or neighborhood revitalization and stabilization.

From there, the Investment Connection team and the Richmond Fed's Supervision, Regulation and Credit (SRC) bank examination staff review applications to determine whether the proposals are compliant with the Community Reinvestment Act (CRA). The CRA requires financial institutions to show that they are providing credit to low- and moderate-income communities, so banks have an interest in adding positively to their CRA records. The SRC staff ultimately reviews the proposals to eliminate some degree of uncertainty for funders, an unusual setup. "The SRC staff are looking at proposed projects before the banks have seen them," says Peter Dolkart, the Richmond Fed's community development regional manager for Maryland and metropolitan Washington, D.C. "What that does is remove some of the guesswork for the banking institutions so that they are better equipped to evaluate a project's potential for CRA credit."

After the SRC and Investment Connection teams review the proposals, the organizations are invited to present their proposals to funders during in-person and virtual events and through the online portal. "The pitch sessions were originally intended to be done in person, 'Shark Tank' style," says Dolkart. "We did our first sessions like that in November 2019, and we were planning to go forward and continue that way in 2020, but the pandemic changed them to virtual sessions."

In one of the first rounds of Maryland pitch sessions in late 2019, an organization from Minnesota called PCs for People, a nonprofit that refurbishes and delivers computer equipment to people who could not otherwise afford it, pitched its ideas to potential funders. Through Investment Connection, PCs for People was able to make several contacts to obtain funding. Last year, it expanded into Maryland and has since provided more than 900 computers and other equipment to low-income students and their families in Baltimore City.

Similarly, during a Virginia pitch session in November 2020, the Blue Ridge Habitat for Humanity in Winchester, Va., presented a proposal to construct new affordable housing in Norris Village, a cottage community. They received $500,000 to build five 1,200-square-foot single-family homes for low- to moderate-income families. Construction of these homes is expected to begin in 2021, and they will be purchased by approved Habitat families when they are finished.

Despite the delays and obstacles caused by the COVID-19 pandemic, the Richmond Fed is optimistic about the program's future. "The future of Investment Connection will be to complement and build on an existing funding ecosystem and to identify projects more in rural areas," says Dolkart. "I think we are going to become a valued tool in terms of identifying where there is a need in rural areas and an asset to existing successful startup programs to enhance what they are doing." **EF**

Share this article: http://bit.ly/investment-connection

BY TIM SABLIK

Has the Pandemic Changed Cities Forever?

COVID-19 transformed how we work and socialize, which could put the future of cities on a new path

Throughout American history, people have moved from farms and small towns to seek their fortunes in the big city. The story of the last century has been one of increasing urbanization. As of 2018, 86 percent of Americans lived in cities or surrounding suburbs, and large cities accounted for a similar share of total U.S. economic output. It wouldn't be a stretch to call cities the engines of growth in the modern era.

But despite the appeal and benefits of urbanization, cities are not without costs. They are more expensive, more crowded, more prone to crime, and more vulnerable to disease outbreaks than sparsely populated rural areas.

The past year has brought that last cost into stark relief. In the era of modern medicine, it has been easy to forget that cities have been associated with many horrible pandemics throughout history. From the plague of ancient Athens during the Peloponnesian War, to the Black Death that ravaged the cities of Europe in the 14th century, to typhoid and cholera outbreaks in the cities of the Industrial Revolution, for most of history, city dwellers could be expected to live shorter lives than their counterparts in the country.

"There are demons that come with density, the most terrible of which is contagious disease," says Edward Glaeser of Harvard University. As one of the country's foremost urban economists, Glaeser has long been a champion of cities and their many societal benefits. But in his forthcoming book with fellow Harvard economist David Cutler, *Survival of the City*, he devotes his attention to the challenges facing cities, with disease high among them.

Urban plagues in the industrial era eventually led to advances in medicine and sanitation technology, which enabled cities to thrive and grow rapidly. Some researchers now wonder whether the COVID-19 pandemic could put a dent in that growth. Densely populated cities like New York were early hot spots for the virus and suffered high rates of infection and death.

Many cities attempted to limit the spread of the virus by shifting work from offices to homes and limiting social gatherings. With vaccines rolling out and virus cases falling, the end of the pandemic seems to be in sight. But will city life return to the way it was before?

THE ATTRACTION OF CITIES

To predict cities' future, it helps to consider why people have been attracted to cities in the past.

"There's a long-running debate: Are people in cities because they love cities or because that is where the highest-wage jobs are?" says David Autor of the Massachusetts Institute of Technology. "I think it is more the latter."

Decades of research by urban economists point to the productive advantages of cities throughout history. Firms in the same industry tend to cluster together in cities because they can share the same inputs into production, like capital and skilled labor. Cities also tend to be located on major

Share this article: http://bit.ly/pandemic-cities transportation hubs, giving them access to bigger marketplaces. People moving to cities have more options for work and play. They interact with more people, share ideas, and spread knowledge across companies, enabling industrywide gains in productivity.

These forces have benefited different industries at different points in time. In the 19th and early 20th century, many cities grew as manufacturing hubs for a particular product, such as automobiles in Detroit. Since the late 20th century, successful cities have focused on knowledge-based industries, like finance in New York or computer technology in Silicon Valley. In recent research, Autor found that work in cities has become increasingly polarized since 1980. College-educated professionals earn a wage premium working in cities even after accounting for higher cost of living, but wages for less-educated urban service workers have flattened.

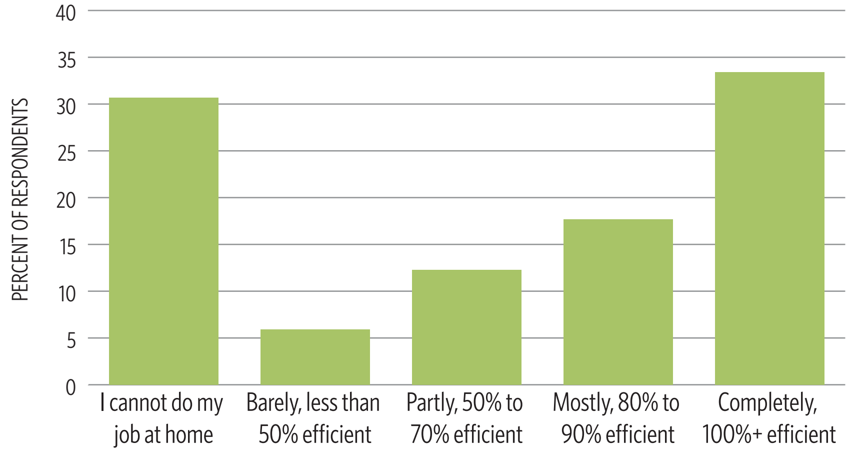
College-educated workers have also been attracted to cities in recent decades because of their amenities, such as theaters, exclusive restaurants, museums, concert venues, and professional sporting events. In a 2020 *Journal of Urban Economics* article, Victor Couture of the University of British Columbia and Jessie Handbury of the University of Pennsylvania found that these urban amenities were the biggest factor in explaining the influx of young college graduates to cities since 2000.

All of this evidence points to cities being attractive places for the highly educated to live, work, and play prior to 2020. But the response to COVID-19 may have changed that. Before the pandemic, most knowledge-based workers in cities still commuted to downtown offices every day. Only a small share of full-time employees worked from home. This may have been due to a stigma against home workers stemming from limitations on the kind of work that it was historically possible to do outside of the office.

"If you go back to the 1980s, there were no networked home computers," says Nicholas Bloom of Stanford University. "So it was mostly low-level jobs that could be done by mail or phone that could be done from home. I think that generated the impression that people working from home were lower level and less productive. It's only since about 2010 that we have been able to fully replicate the office at home."

Not All Jobs Can be Done from Home

Survey respondents describe their ability to telework



NOTE: Data from a survey of 2,500 U.S. residents aged 20 to 64, earning more than $20,000 per year in 2019 carried out between May 21-25, 2020.

SOURCE: Nicholas Bloom, "How Working from Home Works Out," SIEPR Policy Brief, June 2020.

Bloom first began researching remote work more than a decade ago. Prior to COVID-19, the share of work done at home was doubling about every 10 years but from a very small starting point. The pandemic greatly accelerated that process, essentially forcing any firms that could go remote to do so.

"We know from the Bureau of Labor Statistic's American Time Use Survey that before the pandemic, 5 percent of working days were done from home," says Bloom. "During the pandemic, the share of working days from home jumped to over 50 percent."

But this tenfold increase didn't affect all workers evenly. In a survey of 2,500 workers Bloom conducted last May, about a third said they could do their jobs perfectly from home, while another 30 percent said they couldn't do their job from home at all. (See chart.)

This divide is starkest in cities. Lukas Althoff and Conor Walsh of Princeton University, Fabian Eckert of the University of California, San Diego, and Sharat Ganapati of Georgetown University explored the divide in a paper last year. They found that the high-skill, knowledge-based jobs that have benefited the most from cities in recent decades are the ones that can most easily be done remotely, while the low-wage service sector jobs that have seen their wages stagnate can only be done in person. The authors argued this has revealed a paradox about cities.

"The large cities in the U.S. are the most expensive places to live. Paradoxically, this cost is disproportionately paid by workers who could work remotely, and live anywhere," they wrote.

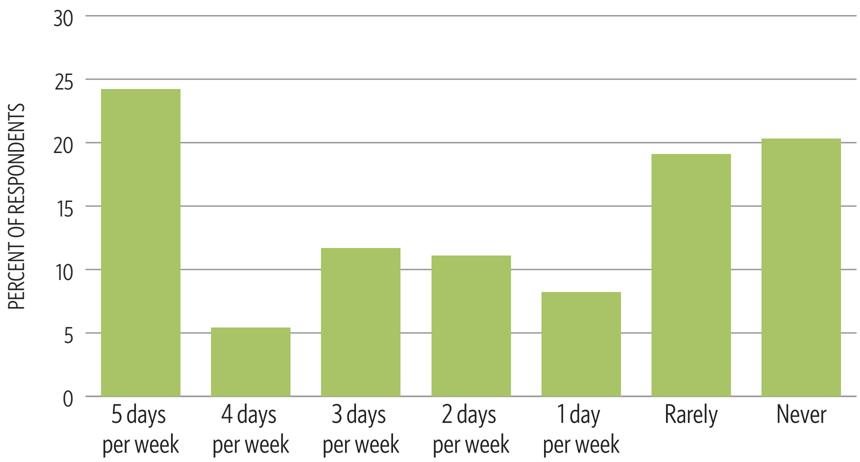
The pandemic also diminished the other major attraction of living in cities: the amenities. Bars and restaurants curtailed in-person seating to comply with social distancing guidelines. Theaters and museums closed. Sporting events played out for TV audiences and empty stadiums. As the lockdowns stretched on, some began to wonder whether people who could now work from anywhere would choose to stay.

A BLIP OR A SEA CHANGE?

After a year of working from home and social distancing, the data suggest that some city residents did decide to move. Bloom found evidence of a "donut effect" in real estate markets for the most densely populated U.S. metro areas. Rents in city centers declined over the course of 2020, while home prices in the surrounding suburbs rose.

Many Workers Want to Continue Working from Home

Responses to the question, "In 2021+ (after COVID), how often would you like to have paid work days at home?"



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SOURCE: Nicholas Bloom, "How Working from Home Works Out," SIEPR Policy Brief, June 2020.

"Workers aren't completely leaving San Francisco or New York, but they are moving out from the center of cities to the suburbs," says Bloom. "And that's entirely rational if you think post-pandemic you will only come into the office three days a week. You are less sensitive to a long commute, and you appreciate having more space at home if you will be spending more time there."

In numerous surveys conducted since the pandemic began, a majority of workers have expressed a desire to continue working from home, at least some of the time, even after the pandemic ends. (See chart.) Several companies, including Microsoft and Salesforce, have announced that their employees can continue working from home indefinitely.

The pandemic has solved what Autor calls a "coordination problem" — it led large numbers of people to make the move to videoconferencing technology all at once. Before the pandemic, in-person meetings were the norm for many organizations, despite the challenges of travel and coordinating schedules. Now, lots of people have experienced virtual meetings.

"The big revolution wasn't that the pandemic taught me how to use Zoom," says Autor, who has been using it to collaborate with co-authors for years. "It's that it got everyone else to use Zoom. Before, it wasn't acceptable for me to tell my colleagues, 'You go to Hong Kong, and I'll just be at home on my computer talking to you.'"

In research with Jose Maria Barrero of Instituto Tecnológico Autónomo de México and Steven Davis of the University of Chicago, Bloom surveyed nearly 30,000 Americans about their plans to work from home post-pandemic. They estimated that 20 percent of all full working days will continue to be done from home post-pandemic, compared with 5 percent pre-pandemic. They attribute this to several factors. Widespread adoption of remote work during the pandemic has helped reduce the stigma against it, and many firms and workers have reported an experience with remote work that was better than expected. Both workers and firms also made investments in physical and human capital to support working from home, such as purchasing home office equipment and upgrading remote servers, that they will be reluctant to completely abandon after the pandemic ends.

"The pandemic has basically accelerated 25 years' worth of telework growth into one year," says Bloom.

Still, the share of work from home is likely to be less than what it was during the height of the pandemic. Not all jobs can be done from home, and even those who have been working from home full time have expressed a desire to return to the office at least part time. In a 2015 *Quarterly Journal of Economics* article, Bloom and co-authors studied a telework experiment at a Chinese travel agency. Home workers were more productive than their office colleagues on average, but more than half of the employees selected to work from home chose to return to the office after the experiment ended. They missed interacting with their co-workers in person.

"For many people, working from their small apartment does not sound like a great thing," says Glaeser. "Particularly for young people, face-to-face contact is likely to continue to be part of work, both because of productivity and because of pleasure. But that doesn't mean that teleworking won't transform the world in different ways."

Even firms that want their teams to continue meeting in person may decide they don't need to locate in expensive cities. With the option to collaborate with anyone virtually as needed, they could choose cheaper locations for their physical headquarters, perhaps in scenic natural settings or with school systems that workers perceive as higher performing.

"Because of this, I think cities like New York are more vulnerable than they have been in decades," says Glaeser.

In addition to the impact of increased telework, social scarring from the pandemic could have a long-term negative effect on demand for urban amenities. After living with the virus for over a year, some city dwellers might be hesitant to return to crowded restaurants, subway cars, and stadiums. Some who formed new habits during the pandemic — exercising at home, watching movies on their televisions — might find no reason to return to old practices such as going to the gym or the movie theater.

On the other hand, the pandemic has also highlighted the inadequacy of virtual gatherings as a substitute for in-person social interaction. After the virus is controlled, there could be pent-up demand to return to life as normal. In a 2020 paper, Richard Florida of the University of Toronto, Andrés Rodríguez-Pose of the London School of Economics, and Michael Storper of the University of California, Los Angeles predicted that demand for urban amenities will remain strong after the virus-induced lockdowns are lifted.

"Nonetheless," the authors wrote, "even if cities will not shrink or die from the COVID pandemic, they will certainly change."

THE EVER-EVOLVING CITY

The history of cities points to both their resiliency and mutability. Cities have survived countless plagues, natural disasters, and wars. At one extreme, Hiroshima and Nagasaki were destroyed by atomic bombs in World War II but eventually returned to their previous growth paths. Because of this history, most urban economists don't count cities out in the long run.

One instructive example from the recent past is the severe acute respiratory syndrome (SARS) epidemic of 2003. Like SARS-CoV-2, the virus behind the illness COVID-19, SARS was a deadly respiratory virus that spread quickly. Although it did not have the global reach of COVID-19, in Asian cities that experienced a SARS outbreak, it prompted similar responses of social distancing and wearing masks. Yet SARS did not seem to leave much of a long-term imprint on cities that experienced it. In Hong Kong, a bad outbreak of SARS prompted more regular cleaning of touch points in public spaces like door handles and elevator buttons. But according to one study, face masks, which were a common sight in the city during the outbreak, gradually disappeared as time passed.

It is certainly possible that the COVID-19 pandemic will prompt more lasting changes in cities since it has been more widespread, long-lasting, and severe than SARS. Most notably, a permanent shift to more remote work could have both positive and negative effects on urban real estate. On the positive side, reduced demand for city living by some residents and conversion of vacated downtown office space to residential use could make expensive cities more affordable.

This rosy scenario requires that city infrastructure is able to adjust easily to changes in demand, however. While history points to the resiliency and adaptability of cities, it is also full of cautionary tales of cities that have fallen into long periods of decline after failing to adjust to big changes. For example, Detroit has struggled with declining population and excess abandoned real estate for decades after the auto industry that fueled the city's growth shrank. In a 2020 article in the *American Economic Journal: Economic Policy*, Raymond Owens III and Pierre-Daniel Sarte of the Richmond Fed and Esteban Rossi-Hansberg of Princeton University found that once neighborhoods empty out, they can remain vacant in the absence of coordination between developers and residents to rebuild. No one wants to be the first to move back to an abandoned neighborhood for fear that no one else will follow.

A 2020 paper in the *American Economic Review* by Attila Ambrus and Erica Field of Duke University and Robert Gonzalez of the University of South Carolina found that housing values in neighborhoods badly hit by pandemics can take centuries to recover. In London, neighborhoods that experienced bad cholera outbreaks in the mid-1800s continued to suffer depressed housing values even 160 years later. Could COVID-19 leave similarly lasting scars on some cities?

Urban economists also worry that COVID-19 will exacerbate the challenges cities were already facing before the pandemic. Autor's research highlights a growing divide between the fortunes of college-educated knowledge workers in cities and less-educated service workers. Any increase in telework is only likely to exacerbate that divide.

"If you were going to design a dread disease that was somehow going to have the effect of making the affluent better off and making the less affluent worse off, you might come up with something like COVID-19," says Autor. "My main concern is that the burdens of this pandemic are falling on the people who can least readily bear them, and the benefits are accruing to the people who least need them."

Glaeser is optimistic that service sector jobs can bounce back in cities as long as downtown properties repopulate with businesses and residents. But if office buildings remain vacant, either because people and firms move on to other places or because a new pandemic emerges to keep people away from cities, then the future looks much worse for urban service sector workers.

"There's a fundamental human desire to be around other human beings," says Glaeser. "Cities specialize in delivering that, which is why I trust the future of cities. But if we have another two or three years of lockdowns and then we get a new pandemic within the decade, that's a really bleak world, not only for urban America but for the entire urban service sector. For those workers, the ability to provide a service with a smile provided a safe haven from job loss in an era of automation and outsourcing. But if the smile turns into a source of peril rather than a source of pleasure, those jobs can vanish in a heartbeat." **EF**

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BY TIM SABLIK

The Fed's New Framework

With a revised strategy, the Fed responds to challenges facing central banks today

Most people know that the Fed makes periodic changes to monetary policy by changing interest rates. What is perhaps less well known is that since 2012 the Fed's approach to monetary policy has been guided by a public strategy document that defines the Fed's longer-run goals. The Fed has made minor updates to this framework over the years, but in August 2020, it unveiled a major revision of its policy strategy.

The original 2012 statement on longer-run goals outlined how the Federal Open Market Committee (FOMC), the Fed's policymaking body, would seek to achieve its dual mandate from Congress of maintaining maximum employment and stable prices. The FOMC announced as its goal an inflation rate of 2 percent, measured by the personal consumption expenditures (PCE) price index. It declined to set a specific target for maximum employment, noting that the maximum level of employment the economy can sustain changes over time and is largely driven by nonmonetary factors.

The Fed's new framework sets a goal for inflation that averages 2 percent over time, meaning that the FOMC will now allow periods of higher inflation to make up for periods of inflation below target. On employment, the Fed's framework now emphasizes that full employment is a "broad-based and inclusive goal." Additionally, the FOMC pledges to respond specifically to shortfalls from maximum employment rather than "deviations" as in the 2012 statement, which implied that too much employment could be as problematic as too little.

These revisions, which the FOMC reaffirmed this January, were the culmination of a year-and-a-half long public review of monetary policy conducted by the Fed. But the story of the Fed's policy framework stretches back further than that, reflecting changes in the challenges facing central banks over the decades.

Fed Chair Jerome Powell delivers opening remarks at a Fed Listens event in Chicago on June 4, 2019.

COURTESY OF THE FEDERAL RESERVE BOARD OF GOVERNORS.

CHOOSING A TARGET

When Congress established the Fed's dual mandate in 1977, the FOMC was much less vocal about how it conducted monetary policy to achieve those goals.

"The FOMC didn't announce its decisions when they were made; they let the markets try to figure them out based on the Fed's actions," says Andrew Levin, a professor of economics at Dartmouth University who served as an economist at the Fed Board of Governors for two decades. "That was standard practice among most central banks until the 1980s and 1990s."

By that time, economists and policymakers had come to view central bank secrecy as counterproductive. Publicly announcing monetary policy decisions would eliminate any potential confusion in the markets, ensuring smoother implementation of policy changes. Additionally, research suggested that announcing a long-term goal for inflation would help anchor the public's expectations for inflation, making it easier to maintain stable prices over the long run.

By the 1990s, central banks in several developed countries such as New Zealand, Canada, and the United Kingdom adopted inflation targets. The Fed waited until 2012 to formally announce an inflation goal, but by then U.S. monetary policymakers were convinced of the benefits of communicating more openly with the public. These communication strategies grew out of the experiences of high inflation in the 1970s. But what central banks did not anticipate was that starting in the late 2000s, they would actually face the opposite problem: inflation that was too low rather than too high.

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Hints of this challenge first emerged in Japan. After booming in the 1980s, the country suffered a serious recession in the early 1990s. Afterward, economic growth slowed and the Bank of Japan cut interest rates to effectively zero, where they have largely stayed since.

"Economists first thought this was just an issue for Japan," says Levin. "But then in the early 2000s, the United States had a recession where interest rates got very low. And economists started thinking very seriously about how it's not easy for central banks to reduce nominal interest rates below zero."

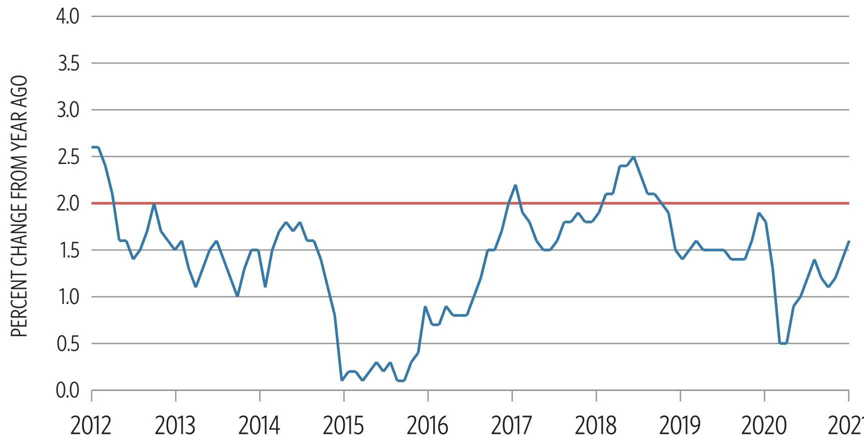
The Great Recession of 2007-2009 saw nominal rates fall to zero in several developed economies. In the United States, the Fed lowered its interest rate target to effectively zero in late 2008 and didn't raise rates until the end of 2015. The Fed had only raised interest rates back up to 2.5 percent at the end of 2018 before it started cutting them again. The COVID-19 pandemic prompted policymakers to drop rates back to zero.

Many economists have attributed the increased prevalence of near-zero policy rates to a global decline in the natural rate of interest — the rate at which monetary policy is neither expansionary nor contractionary. (See "The Fault in R-Star," *Econ Focus*, Fourth Quarter 2018.) A lower natural rate means the peak interest rate will be lower during economic expansions. When interest rates are near zero, policymakers can't lower rates much further because individuals would just choose to hold cash instead of negative interest-bearing bonds. (See "Subzero Interest," *Econ Focus*, First Quarter 2016.) This can constrain conventional monetary accommodation, resulting in monetary policy that is tighter than central bankers would prefer and slowing economic recovery.

This also poses a problem for the inflation-targeting strategies that many central banks adopted. In a frequently cited 2003 paper, Gauti Eggertsson of Brown University and Michael Woodford of Columbia University observed that "the definition of a policy prescription in terms of an inflation target presumes that there is in fact some level of the nominal interest rate that can allow the target to be hit (or at least projected to be hit, on average). But, some argue, if the zero interest rate bound is reached under circumstances of deflation, it will not be possible to hit any higher inflation target, because further interest rate decreases are not possible."

Aiming at a Target

Inflation since the introduction of the Fed's 2 percent goal



NOTE: Based on Personal Consumption Expenditures chain-type price index.
SOURCE: U.S. Bureau of Economic Analysis

If a central bank consistently fails to meet its inflation target while interest rates remain at zero, the public might start to question the credibility of that target. Indeed, observers both inside and outside of the Fed have voiced this concern since the FOMC announced its long-run inflation goal of 2 percent. Except for a few brief periods, inflation has persistently run slightly below the Fed's target since 2012. (See chart.)

A DIFFERENT APPROACH

The apparent decline in the natural rate of interest was one of the motivations for the Fed to undertake a review of its monetary policy framework. When the Fed first unveiled its inflation goal in 2012, the median estimate of the neutral fed funds rate among FOMC members was 4.25 percent — 2 percent inflation plus a natural rate of 2.25 percent. Since then, it has fallen to 2.5 percent.

"With interest rates generally running closer to their effective lower bound even in good times, the Fed has less scope to support the economy during an economic downturn by simply cutting the federal funds rate," Fed Chair Jerome Powell said in a speech announcing the Fed's new policy framework on Aug. 27, 2020. "The result can be worse economic outcomes in terms of both employment and price stability, with the costs of such outcomes likely falling hardest on those least able to bear them."

A lower neutral rate means that the Fed is more likely to face the constraint of the zero lower bound during a downturn. In the years leading up to the 2020 framework revision, Fed officials began to explore different solutions to this problem.

"Broadly speaking, one can point to two approaches: raising the inflation target without changing the policy rule or changing the policy rule without changing the target," says Jordi Galí of the Center for Research in

International Economics, Universitat Pompeu Fabra, and the Barcelona Graduate School of Economics.

Galí acknowledges that the first approach may seem counterintuitive when the Fed has consistently fallen short of its 2 percent inflation target. How could it be expected to achieve an even higher target? In his research, Galí argues the Fed could opportunistically announce a higher target once inflation surpasses 2 percent and then hold steady at the new target. In a world with a low natural rate of interest, an inflation target of 4 percent, for example, would provide monetary policymakers with more room to cut rates during downturns before hitting the zero lower bound. This benefit would need to be weighed against the costs of higher inflation, however.

Ultimately, the Fed chose to keep its 2 percent inflation target but adopt a new strategy: flexible average inflation targeting. Under this approach, the Fed would allow inflation moderately above 2 percent following periods where inflation is below 2 percent. In theory, this should help boost inflation expectations for the future and give the Fed more room to be accommodative.

Under the Fed's old 2012 framework, as the economy strengthened, the Fed responded by raising its policy rates. This was consistent with economic theory: In a world with stable inflation and inflation expectations, the natural rate of interest and thus the nominal interest rate should move with the economy. So, as economic activity heated up and unemployment reached historic lows in 2017-2019, the Fed gradually raised rates. But inflation still remained below target. This puzzle prompted the other major revision to the Fed's policy framework regarding its full employment mandate.

THE PHILLIPS CURVE FALLS FLAT

At the center of the change are evolving views about the Phillips curve. In the decades since New Zealand-born economist Alban William Phillips described it in 1958 — the result of what he called a "quick and dirty" analysis over a weekend — the Phillips curve has served as one guidepost for monetary policymakers. It posits a link between employment and inflation. When employment is running above the economy's long-run potential, inflation should rise, as a tight labor market puts upward pressure on wages and prices. Conversely, when there is a lot of slack in the labor market, inflation pressures should be more muted.

There are problems with using the Phillips curve as a guide for policy in practice, however. It is difficult to know the labor market's full potential, and that value changes over time. In the late 1990s, for example, unemployment fell to historically low levels, but inflation remained low despite the Fed holding steady on rates. Evidently, the natural rate of unemployment in the economy had fallen since the prior expansion. Conversely, the 1970s saw both unemployment and inflation rise at the same time — a phenomenon dubbed "stagflation."

After a slow recovery from the Great Recession, unemployment in 2019 fell to levels not seen in 50 years. This was beyond most estimates of the economy's full potential, and many observers expected inflation to start rising as well. But wage and price inflation remained muted. Labor force participation among prime-age workers (ages 25-54) increased as more people reentered the workforce, defying earlier predictions of a long-term decline due to the baby boomers aging into retirement. Economists and policymakers increasingly speculated that the Phillips curve relationship between employment and inflation had flattened.

In a recent paper with Luca Gambetti of Universitat Autònoma de Barcelona, Galí presented evidence of what he called "a growing disconnect between wage inflation and unemployment." Like the falling natural rate of interest, this presented a potential problem for inflation targeting.

"An outright decoupling of inflation from indicators of economic slack would call into question the inflation targeting framework widely adopted by central banks over the past decades, since that framework hinges critically on the existence of a positive relation between inflation and the level of economic activity," Gambetti and Galí wrote.

A flatter Phillips curve would mean a weaker signal for when the Fed should begin raising rates to prevent an overshoot of inflation. But Fed officials also saw an opportunity in this development. Low unemployment levels weren't placing much upward pressure on prices, but the tight labor market was proving beneficial for workers. As part of the review of its monetary policy framework, the Fed held a series of "Fed Listens" events in 2019. In these sessions, the Fed invited members of the public to share their economic experiences. One consistent takeaway was that minorities, including blacks and Hispanics who historically have suffered higher unemployment rates than whites, were finding more opportunities for employment and advancement as the recovery gained momentum. This prompted a renewed discussion among economists and policymakers about the potential benefits of running an economy "hot" — that is, allowing employment to rise beyond current estimates of its long-run sustainable level.

San Francisco Fed President Mary Daly, along with several current and former Fed co-authors, explored this idea in a 2019 paper. They found evidence that minorities, including black and Hispanic workers, experienced greater employment losses during downturns than whites. These groups also benefited more from employment gains when the labor market was already strong. Essentially, less advantaged groups were typically the first to suffer during recessions and the last to recover during economic expansions. In light of the low inflation of recent years, some Fed policymakers have argued that the central bank can exercise more patience before tightening, allowing more time for the labor market to strengthen and benefit less advantaged groups.

"For nearly four decades, monetary policy was guided by a strong presumption that accommodation should be reduced preemptively when the unemployment rate nears its normal rate in anticipation that high inflation would otherwise soon follow," Fed Governor Lael Brainard said in a recent lecture to a Harvard College Principles of Economics class.

This view was perhaps most famously expressed by former Fed Chair William McChesney Martin Jr. in 1955 when he described the Fed as a "chaperone who has ordered the punch bowl removed just when the party was really warming up." While the Fed's new policy framework does not prescribe a particular response to achieving the central bank's goals, the FOMC has signaled a greater willingness to keep rates low as long as inflation is below target.

"Our new monetary policy framework recognizes that removing accommodation preemptively as headline unemployment reaches low levels in anticipation of inflationary pressures that may not materialize may result in an unwarranted loss of opportunity for many Americans," Brainard said in her presentation.

LOOKING TO THE NEXT RECOVERY

What does the Fed's new framework mean for monetary policy during the post-COVID-19 recovery? For now, the FOMC has said the prescription is clear: continued accommodation. Unemployment is still above pre-pandemic levels; inflation, while it has increased, remains below 2 percent. But how will the Fed respond under the new framework when its objectives conflict?

"We believe that conducting a review at regular intervals is a good institutional practice."

"Inevitably, there are going to be times when inflation is picking up, but employment is still below target," says Levin. Under the 2012 framework, the FOMC pledged to take a "balanced approach" when considering trade-offs between full employment and price stability. Levin notes the 2020 revision removes that language, leaving some questions about how the FOMC will respond to conflicts between its objectives.

Chair Powell and other members of the FOMC have so far stressed that as long as unemployment remains elevated, the Fed will not move to tighten policy unless inflation is consistently above target for an extended period. According to their latest projections, most Fed officials don't expect this to happen until 2023 or later. But the Fed's new framework is a step into uncharted territory, from economic theory to the real world of policy.

"Some policies work very well in our computer simulations but may be harder to implement in practice since they require the central bank to steer inflation along a desired path with a degree of precision that may not be available to policymakers," says Galí. "This certainly poses a risk to their credibility, but so does doing nothing."

One thing is certain: This latest revision to the Fed's monetary policy framework won't be the last. In its new statement on longer-run goals, the Fed also committed to undertaking a public review of its monetary policy strategy, tools, and communication practices every five years.

"We believe that conducting a review at regular intervals is a good institutional practice, providing valuable feedback and enhancing transparency and accountability," Chair Powell said in his speech unveiling the new framework. "And with the ever-changing economy, future reviews will allow us to take a step back, reflect on what we have learned, and adapt our practices as we strive to achieve our dual-mandate goals." **EF**

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TURNING STORMWATER GREEN

Green infrastructure can help reduce polluting runoff during severe storms, but questions about costs give some localities pause

BY HAILEY PHELPS

On Aug. 25, 2017, Hurricane Harvey hit the coast of Texas. Over the next four days, the storm dumped about one trillion gallons of rainwater onto Houston. At its peak on Sept. 1, 2017, one-third of Houston was underwater. The total cost of the destruction was $125 billion, which included damage to over 300,000 structures (more than 200,000 homes) and one million vehicles. Nearly any city would be overwhelmed by more than 4 feet of rain, but Houston is unique in its regular massive floods. Its sewer system was designed to only clear out 12 to 13 inches of rain per 24-hour period, so it quickly overflows and floods during large storms. Another issue is urban sprawl and urbanization, which limits the city's natural drainage capacity and makes cities like Houston more susceptible to flooding.

More than half of the world's population lives in cities. Before the pandemic, experts predicted that this share was likely to grow to two-thirds by 2050. While the trajectory of cities might be on a different course today (see "Has the Pandemic Changed Cities Forever?" p. 4), urbanization remains at a high level by historical standards. Urbanization typically means expanded areas of hard, impermeable surfaces such as roofs, sidewalks, and streets. This — together with predictions that weather events will continue to become more severe due to changes in the Earth's climate — has contributed to concerns about pollution from stormwater runoff. When it rains in urban areas, stormwater flows across the streets and sidewalks at faster speeds and picks up harmful pollutants, carrying a greater amount of them into storm drains and rivers. The increased runoff also limits the amount of precipitation that can soak into the soil and replenish groundwater reservoirs.

Most urban stormwater and sewer systems in the United States were built following World War II, and cities have historically set aside little money for infrastructure operations, maintenance, and renewal. The threat of increased flood events has brought together local government officials, policymakers, climate scientists, and civil engineers to consider solutions beyond traditional flood control infrastructure to increase resiliency.

IMAGE: WILL PARSON/CHESAPEAKE BAY PROGRAM

A rain garden at Long Wharf Park captures and filters stormwater pollution before it reaches the Choptank River in Dorchester County, Md.

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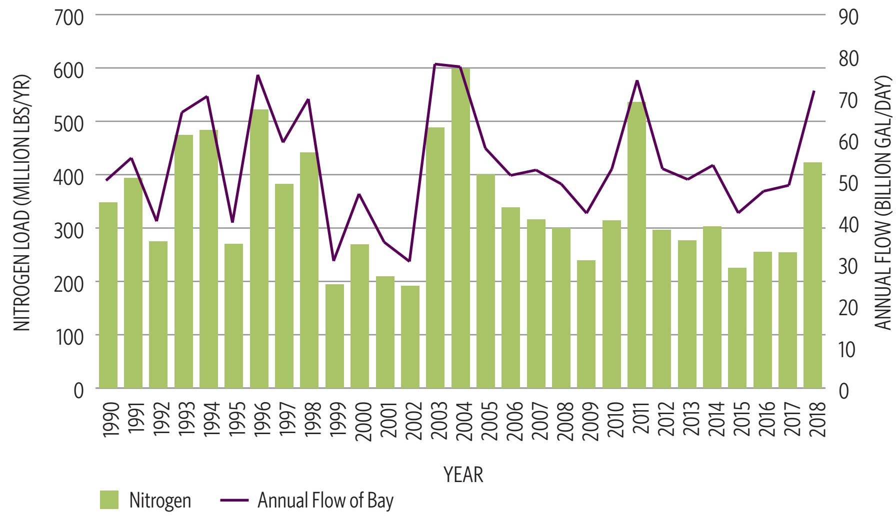
Within the Fifth District, stormwater runoff is the fastest-growing source of pollution to the Chesapeake Bay, the watershed that encompasses parts of Maryland, Virginia, West Virginia, and the District of Columbia. When the watershed receives more rain and river flows increase, the water usually carries more pollution in the form of nitrogen, phosphorus, and sediment. According to data from the Chesapeake Bay Program's Watershed Model, between October 2017 and September 2018, nearly 423 million pounds of nitrogen reached the bay, a 66 percent increase from the previous year. (See chart.) Over the same period, about 42.1 million pounds of phosphorus and 15 billion tons of sediment reached the bay — a 181 percent increase and a 262 percent increase, respectively.

One way to slow the total amount and frequency of pollution entering watersheds such as the Chesapeake Bay is green infrastructure, a relatively new type of infrastructure that has gained momentum in local government planning.



WHAT IS GREEN INFRASTRUCTURE?

As the name implies, green infrastructure relies, roughly speaking, on utilizing soil and plants in place of concrete. The U.S. Environmental Protection Agency (EPA) defines green infrastructure as an installation that "uses vegetation, soils, and other elements and practices to restore some of the natural processes required to manage water and create healthier urban environments."

Two of the most common types of green infrastructure are green roofs and rain gardens. Creating a green roof involves planting vegetation or hosting a community garden on rooftops. Green roofs provide benefits such as improving aesthetics, reducing stormwater runoff, and lowering rooftop temperatures, decreasing the heat island effect that contributes to higher temperatures in urban areas. Rain gardens consist of native shrubs and flowers planted in a small depression formed on a natural slope. They temporarily hold and absorb stormwater runoff that flows from roofs, driveways, and lawns. Both green roofs and rain gardens are relatively simple green infrastructure projects within the reach of individuals and small groups.

Local governments can create green infrastructure on a larger scale by funding projects such as bioswales and permeable pavement. Bioswales function similarly to rain gardens, but they are typically larger. These vegetated ditches allow for the collection, filtration, and permeation of stormwater. Parking lot islands, road shoulders, and medians are ideal sites for bioswale construction. Another way to mitigate flooding and stormwater runoff is by using alternatives to traditional pavement when paving roads. Permeable — that is, porous — pavement allows surface runoff to penetrate to underlying layers of dirt and gravel and slowly infiltrate into the soil below or discharge into a sewer system.

In addition to green infrastructure, civil engineers and urban planners refer to "grey" or "blue" infrastructure. Grey, or general, infrastructure is what people most often think of when they hear the word "infrastructure"; it includes systems like highways, local roads, sidewalks, power lines, sewer systems, water lines, and structures like buildings and seawalls. Blue infrastructure refers to water elements, like rivers, canals, ponds, wetlands, and floodplains.

Organizations like the Green Infrastructure Center (GIC), a nonprofit formed in 2006, help communities and developers in the United States evaluate their green infrastructure assets from natural resources such as forests and wetlands to constructed green infrastructure such as bioswales and green roofs. "We focus on helping local governments and communities make plans to conserve as much of their natural resource assets as possible and then build in the least impactful manner," says Karen Firehock, the executive director and co-founder of the GIC.

In 2009, the GIC developed a map of green infrastructure assets for the Richmond, Va., region to identify opportunities to connect a network of green infrastructure across jurisdictional boundaries. The following year, the project was expanded to create a "greenprint," a blueprint of how the postindustrial city can develop its over 9,000 underutilized or vacant parcels of land in environmentally conscious ways, including stormwater runoff control.

The GIC followed up its plan in 2012 with a demonstration pilot project using Upper Goode's Creek, a small watershed in the southern part of Richmond, Va. The organization and its partners created a new two-acre park and walkable access to Oak Grove-Bellemeade Elementary School to show how restoration activities can be targeted within neighborhoods to reduce stormwater runoff. In 2013, the GIC partnered with the James River Association, the Alliance for the Chesapeake Bay, and the City of Richmond to clean up Upper Goode's Creek. Through this collaboration, they were able to restore the streambanks, install a forested buffer, and create a bioswale, which helped reduce pollutant loads into the creek and provide outdoor recreation and learning opportunities.

In addition to the GIC, there are many groups active in restoring and preserving the Chesapeake Bay. One such group is the Chesapeake Stormwater Network, a network of nearly 11,000 stormwater professionals from within the Chesapeake Bay watershed who work on stormwater control practices across the Chesapeake Bay region. "We are working with researchers who are developing projected precipitation volumes and intensities for the Chesapeake Bay watershed and thinking about how to change future design standards to better withstand those conditions," says David Wood, the stormwater coordinator of the organization.

ENVIRONMENTAL BENEFITS OF GOING GREEN

Investing in green infrastructure can both absorb and slow runoff, improve water quality, reduce flooding, and aid in the supply of fresh, reusable water. "Green infrastructure is the meat and potatoes of stormwater management from a water quality standpoint and increasingly from a flood control and prevention standpoint," says Wood.

In July 2018, the GIC finished a two-year project to map and evaluate green infrastructure in Norfolk, Va., and help Norfolk's government create strategies to make the city more resilient to sea level rise due to climate change. Using imagery from the National Aerial Imagery Project, the GIC created a land cover map of green spaces and impervious surfaces and used that map to develop "plaNorfolk 2030," a comprehensive green infrastructure plan. The organization found that community planning and individual actions can have a large effect in mitigating stormwater runoff. Their data revealed that there are approximately 47,500 single-family home parcels in Norfolk, Va. — 31,000 of which have room to plant at least one tree. If each household planted just one tree, over 62 million gallons of rainwater would be intercepted each year, enough to fill 1.5 million bathtubs.

Green infrastructure strategies such as tree planting and rainwater harvesting, a method of collecting and storing rainwater, increase the efficiency of the water supply system. Rainwater collected on rooftops and in barrels can be used for outdoor irrigation and can reduce indoor municipal water use. The water infiltrated into the soil through rain gardens and bioswales can increase the supply of ground water, an important source of freshwater in the United States. Additionally, presence of trees in a community can decrease the amount of stormwater runoff and pollutants that reach local waters. Tree roots and leaf litter create soil conditions that help rainwater infiltrate into the soil. "We can certainly build more stormwater ponds, but they waste valuable land. It's a lot cheaper and easier to put more trees in a city," says Firehock.

ECONOMIC BENEFITS

Adding green infrastructure for stormwater management systems often results in lower capital costs. According to the EPA, green infrastructure can also reduce a community's infrastructure costs, promote economic growth, and create construction and maintenance jobs. A survey of members of the American Society of Landscape Architects revealed that many stormwater professionals select green infrastructure over grey because green options were less costly and that long-term operation and maintenance expenses cost less. The savings result primarily from lower costs for site grading, paving, and landscaping.

But the economics can be ambiguous. On one hand, green infrastructure design standards are often more context-specific than grey infrastructure design standards because green infrastructure projects are designed and built to suit the soil, terrain, and water conditions of each individual site. On the other hand, some green infrastructure projects allow elimination or reduction of expensive material components, such as curbs, drains, stormwater conveyance pipes, and tanks. Others, such as green roofs, may be initially more expensive than traditional counterparts but have lower long-term maintenance costs, which make them less expensive over time. Although some green infrastructure materials are more expensive than conventional grey solutions, they reduce overall stormwater management needs, possibly reducing total costs.

One example of a cost-saving green infrastructure project is the quadrangle of Episcopal High School in Baton Rouge, La. For years, the school suffered from flooding in the courtyard because of an old and inadequate drainage system. The cost to fix the quadrangle using conventional grey infrastructure was approximately $500,000. Instead, the school hired Brown+Danos Landdesign to design bioswales and a rain garden for the space to capture rainfall and limit the amount of stormwater flowing into the existing drainage system. The cost of implementing the green infrastructure facilities cost $110,000, nearly 80 percent less than the conventional solution cost.

In addition to the direct effect on stormwater, green infrastructure may have other benefits to area residents — a characteristic economists call externalities. One research project sought to determine how much value people put on green infrastructure's benefits. In a recent study published in the *Journal of Environmental Economics and Management*, researchers at University of Illinois Urbana-Champaign, Reed College, and the EPA conducted a survey in two major U.S. cities, Chicago, Ill., and Portland, Ore., to estimate the benefits of stormwater management improvement in terms of people's stated willingness to pay money and volunteer their time. They found that people placed positive values on improvements in aquatic habitat, water quality, and flood reduction, and that the monetary value of such improvements in urban areas can be quite large. Participants stated they would be willing to pay as much as $294 per household per year in Chicago and $277 per household per year in Portland to fund a hypothetical project to improve an aquatic habitat from fair to excellent and water quality from boatable to swimmable. The results also indicate that people may be willing to volunteer nontrivial amounts of time to participate in a project to improve the environment in urban areas. An average respondent might be willing to volunteer 50 hours a year for the same hypothetical project to restore an aquatic habitat and improve water quality.

CHALLENGES OF GREEN INFRASTRUCTURE

Despite growing enthusiasm for their benefits, green infrastructure projects have limitations and drawbacks as well. Green roofs, for example, can function only on roofs with slopes less than 20 degrees and may also require additional support to bear the added weight of the vegetation. Also, during dry periods, green roofs need to be irrigated and maintained by hand. Similarly, rain gardens and bioswales cannot absorb stormwater if they are constructed on steep slopes. Bioswales also require more maintenance than traditional curb and gutter systems. Lastly, the use of permeable pavement is limited to paved areas with low traffic volumes and decreased speeds and with slopes less than 5 percent. Although many sites fit within these constraints, many others do not.

Another challenge of integrating green infrastructure into stormwater programs is that green infrastructure performance and its benefits are context and location specific, yet fixed design standards often imply a one-size-fits-all approach. Some cities are working to address this challenge through partnerships among public, private, nonprofit, and academic research organizations. In the United States, the EPA offers several tools that assist designers and planners seeking to incorporate green infrastructure into a project. The integration of green infrastructure within existing certification schemes can be a useful way of introducing green infrastructure to local or national design practitioner communities.

Mainstreaming green infrastructure also faces the challenge of finding a suitable regulatory environment. Unlike fire or land protection, few jurisdictions have clear rules for regulating green infrastructure. In the United States, there are federal regulations that mandate green infrastructure in certain vulnerable areas like coastal regions, but there is no such regulation for less vulnerable urban areas. Property rights of landowners also make it challenging to impose top-down green infrastructure initiatives in cities. For these reasons, most green infrastructure projects seek voluntary participation.

A fourth type of barrier is financial — lack of funding to implement projects and uncertainty about costs and cost-effectiveness. At the federal level, there is no single source of dedicated funding to design and implement green infrastructure. Without federal assistance, the most frequently used tool is issuance of municipal bonds, a type of bond issued by states, cities, counties, or other government entities to fund day-to-day obligations or finance projects. Another way to raise money for green infrastructure projects has been to increase stormwater fees, the charges imposed on real estate owners for pollution from stormwater drainage and impervious surface runoff. Other communities have found success by encouraging homeowners and developers to incorporate green infrastructure practices by offering incentives in the form of stormwater fee discounts or credits. Unfortunately, many communities do not have the funds to offer such incentives, and others are unwilling to do so.

Proponents of green infrastructure argue that the biggest deterrent to investing in green infrastructure is the belief that green infrastructure is too expensive and not worth the cost. "People are often told that they can't do green infrastructure projects because they cost more than conventional stormwater management projects," says Firehock. "Oftentimes, green infrastructure costs less, but a lot of people are not familiar with how to do it." But outside of surveys, it is difficult to estimate the costs and benefits of green infrastructure technology in a particular situation and how to translate these cost/benefit calculations into financial models to fund capital and labor expenditures. Moreover, because green infrastructure projects are not always cheaper up front than grey infrastructure projects, policymakers may be hesitant to pursue them due to uncertainties regarding the cost of long-term maintenance and cost savings.

CONCLUSION

The history of urban drainage and stormwater management in the United States has been written in miles of underground grey infrastructure such as pipes, sewers, and tunnels that carry stormwater out of sight and out of mind. Supporters of green infrastructure believe a transition to green infrastructure will be a worthwhile transition in the long run, leading to safer and less flood-prone communities. **EF**

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IMAGE COURTESY: SARA JACKSON

Matthew Jackson

On human networks, the friendship paradox, and the information economics of protest movements

As a young economist out of Stanford, Matthew Jackson trained his sights at first on game theory, the highly mathematical area devoted to strategic decision-making. But before long, in the early 1990s, he began to focus on social networks — that is, human networks. (Facebook was not yet a gleam in Mark Zuckerberg's eye, and Twitter was more than a decade from launching.) Jackson started researching the effects of social networks on employment, inequality, and the spread of behavior, good or bad.

Jackson's interest in networks grew out of a lunch conversation with another economist, Asher Wolinsky of Northwestern University, about how people become influential in their networks. They realized there were many unknowns about networks and how they influence people. "There was already a large literature in sociology studying networks," he says today. "But the central role that networks play in economic behaviors was underexplored. So there was a lot for us to begin to try to understand."

In addition to numerous papers and journal articles — according to a recent study, he is one of the half-dozen most published authors in the top five economics journals from 1994 to 2017 — Jackson is the author of *Social and Economic Networks* (Princeton, 2008), a book for researchers, and *The Human Network: How Your Social Position Determines Your Power, Beliefs, and Behaviors* (Pantheon, 2019), for the general public.

David A. Price interviewed Jackson by phone in January 2021.

EF: How did you become interested in economics?

Jackson: Economics was not my childhood calling. I grew up in the Apollo era and was looking more to the stars. The space race and watching Neil Armstrong land on the moon were fascinating to me. I dreamed of being an astronaut. But my eyesight precluded that, and I enjoyed mathematics and physics quite a bit. Science was being pushed at that time, so that drew me in.

When I was in college, we were supposed to do undergraduate research in our junior and senior years. In studying math, I craved ways to apply it. I went to Harold Kuhn, who was a game theorist in Princeton's math department, and asked him where on campus could I find somebody who actually applies some of the mathematics to the real world. He pointed me to Hugo Sonnenschein, who was a professor in the economics department. So I started working with Hugo in trying to model people's preferences and choices using mathematics. I realized I could do two things I loved at the same time: to use the tools of mathematics and to understand the world better.

EF: A lot of your research has involved looking at the effects of social networks — in the old-fashioned sense of networks among people. Most people understand that social networks can be important to finding a job. You've argued that their importance is much more than that. In what way?

Jackson: As an example, one key network phenomenon is known among sociologists and economists as homophily. It's the fact that friendships are overwhelmingly composed of

Share this article: http://bit.ly/int-jackson people who are similar to each other. This is a natural phenomenon, but it's one that tends to fragment our society. When you put this together with other facts about social networks — for instance, their importance in finding jobs — it means many people end up in the same professions as their friends and most people end up in the communities they grew up in.

From an economic perspective, this is very important, because it not only leads to inequality, where getting into certain professions means you almost have to be born into that part of society, it also means that then there's immobility, because this transfers from one generation to another. It also leads to missed opportunities, so people's talents aren't best matched to jobs.

EF: In your book *The Human Network*, you described four ways of assessing a person's importance within a network: popularity, connections, reach, and brokerage. How are these different, and which are the best to have?

Jackson: Pure popularity is great for direct influence. It enables somebody simply to get a message out quickly to many people directly or to be a role model to many other people. An example is somebody on Twitter who has hundreds of thousands or millions of followers.

The idea of influence in terms of connections is the old idea of, "It's not what you know, but who you know." Here, it's not the raw number of friends that one has that's important but having friends who are well connected. And they're in turn well connected because their friends are well connected and so forth. The idea of how well connected someone is in a network is what underlies things like the Google search engine and how it was originally programmed: They were looking to see how important a webpage was by looking at the importance of the webpages that linked to it. That turned out to be a powerful concept in identifying key positions in a network beyond just counting connections.

The third measure, that of reach, looks at the layers of a person's connections: How many friends does a person have, how many friends of friends does a person have? This kind of measure turns out to be useful in other contexts, like studying the spread of a disease, for instance, or the diffusion of an idea.

The fourth type of influence, brokerage, is perhaps the most distinct. Somebody is influential in this way if he or she is a key connector between people in at least two other discrete groups. You can think of someone who, for instance, does work at the interface of different sciences and talks to people in both camps. These people can be brokers or key connectors who transfer knowledge from one group to another. These key connectors have been studied by sociologists; they turn out to be important conduits for information flows between groups and also end up often benefiting from those key positions.

"Stratification varies greatly by region. In some places, the poor are as well connected to the rich as they are to other poor, while in other places, you have the poor completely isolated."

STRATIFICATION

EF: Do you think social networks in the United States are becoming more stratified economically or less so?

Jackson: I'd love to know the answer to this question — especially to have data that tracks this over time, which is hard to come by. But what we can see is that economic stratification is very strong geographically in the United States. We see also that this stratification varies greatly by region. In some places, the poor are as well connected to the rich as they are to other poor, while in other places, you have the poor completely isolated. This turns out to be highly predictive of whether children born into poor families grow up to be poor themselves.

In terms of the time trend, I think what we have seen is the substantial increase in inequality in the United States and a lot of other countries over the past few decades. So understanding that stratified and segregated societies play a key role in driving inequality is critical to designing better policies. We can track it from year to year and we can look at micro trends, but getting long-term trends about network structure will take a lot of data gathering over time.

EF: You mentioned that there's a lot of variation regionally in how much connection there is between the poor and the affluent. Is there any pattern to that? Is there anything different about the areas where there's more connection?

Jackson: That's something we have a pretty large team studying at the moment, and I hope we'll be able to release some research on that shortly. There's a lot that goes into it, and it's a complex question — it's not just one factor.

You can see differences in certain kinds of settings. Let's take two high schools. One is a small high school and the other is a very large high school, and both of them are fairly diverse. When we compare the friendships within those high schools, the small high school will usually be more integrated than the large one. If you have a high school of less than a hundred students, they'll integrate; however, once they get to a thousand or more students, they'll tend to self-segregate. So it has to do with how the institutions are either putting people in close contact with each other or allowing them to separate — as well as whether different groups are large enough for them to sustain enough friendships just among themselves. There's a whole series of different factors like that. We're trying to uncover those now and diving deeper and deeper into microdata on this question.

EF: If social networks have a great effect on inequality and social mobility, what does this mean for policies to try to reduce inequality and promote social mobility?

Jackson: It means reducing inequality and improving mobility require more than just imposing taxes and shifting money around. They require overcoming the information and access barriers that are there. Moreover, network effects can lead well-targeted policies to have multiplicative or even exponential impact. And I think this is true of all sorts of policy problems. From inequality to halting the spread of a disease, when you really understand the network patterns and the feedback effects, it gives you an idea of how to structure policies and why certain policies can be much more effective than you would have anticipated.

I think of cash transfers as treating the symptoms, the pain, but they're not treating the disease: What are the root causes of the inequality, the reasons that people are stuck in poverty? Shifting money around can help alleviate some of that, but it doesn't necessarily get at all the root causes. And until you really attack those, you're going to have this problem be persistent. It means getting people information about how important it is to educate their children. It means getting people access to opportunities to go to universities, to get jobs, and to pursue whatever their dreams might be.

FAMILY FOOTSTEPS

EF: Often the role of networks plays out at the family level. An example is following in a parent's footsteps. Your mother or father is a doctor, which gives you information about the medical profession, so you decide to become a doctor. Does that seem to be a typical way that networks influence mobility?

Jackson: When you look at professions, people are overwhelmingly, by factors of 10 or higher, more likely to be in the same profession as their parents than in another profession randomly picked. That happens for some natural reasons in the sense that you have more information about that profession and more connections in that profession and so forth. Those network effects naturally push people toward similar professions as their parents.

On one hand, that means people are better prepared for those jobs, but it also means you have more of a chance of ending up being stuck, especially in professions that end up being replaced by automation or other things.

It also means that people aren't necessarily being matched to their talents. I think that that's one of the most important aspects from a macroeconomic perspective — we're not using the talents in the economy as well as we could. There are people who have a lot of skills and abilities and talents that aren't being matched to professions that would make use of them.

EF: What can be done to fill in when the family connections aren't there? Are there good ways that society can more effectively pluck smart kids out of the hinterlands or out of the inner city and expose them to possibilities that are a good match for them?

Jackson: The challenge is that the homophily and segregation that we see in a network exist for a reason. Some of the reasons are good and some are bad.

When you look at people's networks, part of the reason they associate with people who are similar to themselves is that those people's experiences are going to be most informative. So if I'm that teenager, the people who can give me the most clear picture of what it's going to be like for me to undergo something are other teenagers who are in similar circumstances. If I'm growing up in an inner-city high school and I want to figure out what it's like to go to a university, I don't look for understanding from somebody who went to a wealthy prep school; I want to talk to somebody else who's in an inner-city high school who's gone through that experience. That's going to be much more informative to me. But there's a lot fewer of those people, so it's a lot harder for me to get that information.

Once we realize that there's this structure, it doesn't mean that we want to go around the world trying to completely rewire everybody's networks. That might end up not being efficient. What it does mean is that we have to figure out ways of getting them information and overcoming the access barriers that are inherent in these structures.

THE FRIENDSHIP PARADOX

EF: In a recent journal article, you analyzed the effects of friendship

Matthew Jackson

PRESENT POSITION
William D. Eberle Professor of Economics, Stanford University

SELECTED PAST POSITIONS
Professor of Economics, California Institute of Technology, 1997 – 2006
Assistant Professor, Associate Professor, and Professor of Managerial Economics and Decision Sciences, Kellogg Graduate School of Management, Northwestern University, 1988 - 1996

SELECTED ADDITIONAL AFFILIATIONS
External Faculty Member, Santa Fe Institute
President, Game Theory Society

EDUCATION
Ph.D. (1988), Graduate School of Business, Stanford University; B.A. (1984), Princeton University

networks on college students' behavior. You found that students tend to overestimate how much a typical student drinks or abuses drugs because their perceptions are distorted by the average amount of drinking or drug abuse in their own circle of friends. Why does this distort their perceptions?

Jackson: This concerns another network phenomenon, which is known as the friendship paradox. It refers to the fact that a person's friends are more popular, on average, than that person. That's because the people in a network who have the most friends are seen by more people than the people with the fewest friends.

On one level, this is obvious, but it's something that people tend to overlook. We often think of our friends as sort of a representative sample from the population, but we're oversampling the people who are really well connected and undersampling the people who are poorly connected. And the more popular people are not necessarily representative of the rest of the population.

So in middle school, for example, people who have more friends tend to have tried alcohol and drugs at higher rates and at earlier ages. And this distorted image is amplified by social media, because students don't see pictures of other students in the library but do tend to see pictures of friends partying. This distorts their assessment of normal behavior.

There have been instances where universities have been more successful in combating alcohol abuse by simply educating the students on what the actual consumption rates are at the university rather than trying to get them to realize the dangers of alcohol abuse. It's powerful to tell them, "Look, this is what normal behavior is, and your perceptions are actually distorted. You perceive more of a behavior than is actually going on."

EF: As many Americans moved last year out of large cities, presumably they've been incorporating new neighbors into their networks, perhaps people with quite different experiences and values from theirs. What effects, if any, would you expect from such interactions taking place on a large scale?

Jackson: Affluent people tend to move to more like-minded suburbs. Also, social media enables people to connect with people who are very similar to themselves at greater distances. So it's not clear that a lot of the moving around will actually result in a melting pot. Getting neighborhoods to integrate on a level that's not just having people live side-by-side, but actually being friends with each other and communicating with each other, is not necessarily easy to achieve.

"Giving people the ability to freely exchange information doesn't always go in the direction you might imagine. People are influenced by their friends and those friends aren't always representative of the fuller population. That can distort things in either way."

EF: Is it hard to measure the effects of social networks empirically?

Jackson: Most definitely, yes. This is a major challenge that faces network scientists.

Establishing causality is extremely hard in a lot of the social sciences when you're dealing with people who have discretion over with whom they interact. If we're trying to understand your friend's influence on you, we have to know whether you chose your friend because they behave like you or whether you're behaving like them because they influenced you. So to study causation, we often rely on chance things like who's assigned to be a roommate with whom in college, or to which Army company a new soldier is assigned, or where people are moved under a government program that's randomly assigning them to cities. When we have these natural experiments that we can take advantage of, we can then begin to understand some of the causal mechanisms inside the network.

Once we have that evidence and that understanding, then we can go back and further study the influence of friends and peers even when we don't have good causal identification, as we're sure from previous studies that the effect we're seeing really is causal.

PROTESTS

EF: In work with Salvador Barberà, you've looked at social network theory in the context of popular revolts. You found that mass protests are important to revolts and that social media isn't necessarily a good substitute. Please explain.

Jackson: A simple way to put it is that it's cheap to post something; it's another thing to actually show up and take action. Getting millions of people to show up at a march is a lot harder than getting them to sign an online petition. That means having large marches and protests can be much more informative about the depth of people's convictions and how many people feel deeply about a cause.

And it's informative not only to governments and businesses, but also to the rest of the population who might then be more likely to join along. There are reasons we remember Gandhi's Salt March against British rule in 1930 or the March on Washington for Jobs and Freedom in 1963.

This is not to discount the effects that social media postings and petitions can have, but large human gatherings are incredible signals and can be transformative in unique ways because everybody sees them at the same time together with this strong message that they convey.

EF: Looking at the government's side of such a situation, you suggested that suppressing the flow of information can hinder a revolt, but you also found that free information flows can also do so. Why is that?

Jackson: Suppressing information obviously keeps people in the dark about how strong support might be for things, and you see that in various countries trying to suppress the ability for people to protest or to speak out.

On the other hand, giving people the ability to freely exchange information doesn't always go in the direction you might imagine. That gets back to some of these network effects that we've been talking about: People are influenced by their friends and those friends aren't always representative of the fuller population, and that can distort things in either way. So it could be that I personally feel strongly about a cause and then I listen to some of my friends who happen not to support it, and then I become discouraged, even though lots of the population does support it.

WRITING FOR GENERAL AUDIENCES

EF: Let's talk about your experience in writing *The Human Network*. Your previous writing was almost entirely meant for sophisticated researchers. What was hard about making the adjustment from writing for fellow researchers to writing for a general readership?

Jackson: I think there are three challenges. One, I think it's important to have a really clear conceptual framework of how all the different ideas in the field fit together.

The second is that in technical writing, as scientists, we're very cautious in what we say. Everything is qualified with lots of statements like, "In these very specific circumstances, we saw a correlation that we can't quite be sure is causation, but we believe might be for these kinds of reasons." The long sentences with ifs and maybes and perhapses do not make for great reading for the public. I think that in writing for the public, you have to find good examples where all those nuances come out and are clear but aren't ones that you have to keep reminding people of.

Finally, it just takes a lot of time and care and thinking about how to make the points in ways that are easy to understand and also make for pleasant reading.

EF: You mentioned your work on sorting out where interconnectedness between the poor and rich is strongest. What else are you working on now?

Jackson: We're just about to release a paper on social capital — how to measure people's social capital, how it varies regionally, and what's most predictive of people's economic mobility.

I'm also working with a group of psychologists here at Stanford University in studying how student support networks evolve over time and affect their mental health and well-being. We're tracking things like how they form their networks, whom they interact with, which groups of students tend to have the most diverse networks, do they connect with people who are empathetic, how does that affect their choice of majors, how does it affect their performance in the classroom, how does it affect whether they become depressed?

With the unique circumstances of the pandemic, we have a study in place where we've been studying several cohorts of students who formed friendships on campus, and now we have a cohort that's forming friendships via social media and via Zoom and other forms of connection. I think that comparing these cohorts will help us understand a lot of the dynamics of these networks.

And I still nurture a love for theory. I'm working on some game theoretic models of culture and norms and trying to understand patterns of behaviors in societies and why some societies might have systematic corruption and others have very little corruption. These issues, I think, can be understood fairly well from a game theoretic perspective, and I hope that some of our models will be useful in that. **EF**

BY NICK GARVEY

Does Health Insurance Improve Health Outcomes?

Jacob Goldin, Ithai Z Lurie, and Janet McCubbin. "Health Insurance and Mortality: Experimental Evidence from Taxpayer Outreach." *Quarterly Journal of Economics*, February 2021, vol. 136, no. 1, pp. 1–49.

Can health insurance cause people to live longer? Randomized studies of this question have been rare. In a recent article in the *Quarterly Journal of Economics*, Jacob Goldin of Stanford Law School and Ithai Lurie and Janet McCubbin of the U.S. Department of the Treasury's Office of Tax Analysis used evidence from a randomized outreach study conducted by the Internal Revenue Service (IRS) to estimate a causal relationship between health insurance coverage and mortality outcomes.

Under the "individual mandate" of the Patient Protection and Affordable Care Act, commonly known as the Affordable Care Act or ACA, individuals without health insurance are required to pay a tax. At the time of the study, the tax was at least 2.5 percent of household income above the filing threshold (the rate is now zero). In 2017, the IRS identified 4.5 million households that had previously paid that tax. Of those 4.5 million households, the IRS randomly selected 3.9 million to receive a letter reminding them of the tax for not having insurance, as well as directing them to resources for finding insurance. This experiment forms the basis of the authors' research.

First, the authors collected IRS administrative data, which records whether an individual is enrolled in health insurance that satisfies the ACA's "minimum essential coverage" provision. The IRS data also identified those households that were sent the reminder about their lack of coverage. The authors also collected data from the Social Security Death File on deaths among the 4.5 million households in the experiment.

Focusing attention only on people who had not found coverage in the brief period between payment of the tax and the letter mailing, the authors found that individuals who received a letter (the treatment group) were 1.1 percentage points more likely to enroll in coverage in the two subsequent years than those who did not receive a letter (the control group). The effect was strongest (1.8 percentage points more likely) among middle-aged adults, defined as those aged 45-64. The authors also noted that the coverage induced by receiving the letter was mostly from enrollment in healthcare.gov exchange plans followed by enrollment in Medicaid, with other sources of coverage being less important.

The authors then used assignment to the treatment or control group as the basis of what is known as an instrumental variable regression. Simply regressing mortality on months of insurance might not give us the causal effect of insurance coverage on mortality, because other unobserved factors may play a role. If a variable — in this case, whether the person received the letter or not — satisfies certain technical conditions, researchers can use it to estimate the causal effect of one variable on another without concern about confounding variables.

The authors first took care to rule out explanations for lower mortality in the treatment group other than increased insurance coverage. For example, perhaps the letter reduced mortality by increasing after-tax incomes of people no longer paying the tax. But the intervention reduced the individuals' tax bills by only $4.70 on average, too small to plausibly account for the differences in mortality. The intervention could have also reduced mortality by pushing people into the labor force to obtain health insurance through employment. The authors noted, however, that Medicaid and exchange plan enrollment, and not employer-sponsored insurance, accounted for the vast majority of the increased coverage. It may also be that individuals who applied for Medicaid also qualified for other benefits programs such as the Supplemental Nutrition Assistance Program or Temporary Assistance for Needy Families, which improved their health outcomes. The authors showed that this is unlikely, since the mortality reduction was not significantly different for households whose incomes would qualify them for Medicaid and those whose incomes would not.

The authors found that for middle-aged adults, each additional month of coverage induced by the intervention was associated with a 0.18 percentage point reduction in mortality risk over the two-year time span. They caution that this estimate, while statistically significant, is imprecisely estimated — meaning there's a good chance the actual effect could be much larger or smaller.

Ben Franklin once remarked that nothing in life is certain except for death and taxes. Yet even he likely did not foresee that taxes could save people from a premature death. **EF**

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BY JOHN MULLIN

A Look Back at Financial Repression

The policies were gradually phased out in many advanced and emerging economies. Will they come back?

In the early 1960s, South Korea's economy was far from the dynamic performer that would later become known as an "Asian Tiger." On the contrary, its disappointing growth drew unfavorable comparisons to North Korea at the time.

In their seminal 1973 treatises on financial markets and economic development, Stanford University economists Ronald McKinnon and Edward Shaw labeled South Korea's ailment "financial repression." According to their diagnoses, the country's economic development had been impaired by well-intentioned but counterproductive policies — chiefly interest rate ceilings and administratively directed investment programs — that combined to tax savings and misallocate investment. The country's prospects improved greatly after it introduced fiscal and banking reforms in 1964-1965 that substantially removed these polices and allowed interest rates to increase toward market-clearing levels.

Many policies have been associated with financial repression over the years, and they have had many rationales. For example, governments have often barred domestic residents from buying foreign currency to invest abroad. These restrictions, known as "capital controls," are regularly used in tandem with domestic interest rate ceilings in order to channel inexpensive funds toward a government or its preferred beneficiaries. But capital controls are also motivated in many cases by the more benign goal of insulating domestic financial markets from volatile international capital flows.

Bank reserve requirements are also often implemented with mixed goals. While there is no doubt that they can facilitate deficit financing by creating a captive market for government debt, in most cases they are at least partially motivated by the goal of reining in excessive risk-taking by private banks, particularly when governments provide bank deposit insurance.

The work of McKinnon and Shaw focused on emerging markets, but policies that fit their definition of financial repression were also used extensively in Europe, Japan, and the United States in the aftermath of World War II. Some economists have argued that these policies helped governments lower the real returns on their debt obligations and thereby helped reduce their debt-to-GDP ratios.

Arguably, financial repression was baked into the postwar international financial system from the start. The Bretton-Woods exchange rate system encouraged free foreign exchange convertibility for export and import transactions. But the system expressly permitted capital controls, which gave governments increased latitude to control the pricing and allocation of credit in their domestic economies.

As the postwar period progressed, financially repressive policies were phased out in many countries. Recently, however, financial market observers have hypothesized that the accelerating trajectory of government debt levels around the globe may increase the incentives for governments to impose financially repressive policies.

BRETTON WOODS SETS THE STAGE

The Bretton Woods agreement — which profoundly shaped the postwar international financial system — was formed in response to the incredible financial turbulence of the period between the world wars. In 1931, over 40 of the world's 54 major economies were on the gold standard, meaning they pegged the value of their currencies relative to gold by standing ready to buy and sell gold with their currencies at a fixed price. International capital flows under this system were highly mobile, and the ability of countries to maintain the value of their currencies in the face of outflows depended on their credibility and the size of their gold reserves.

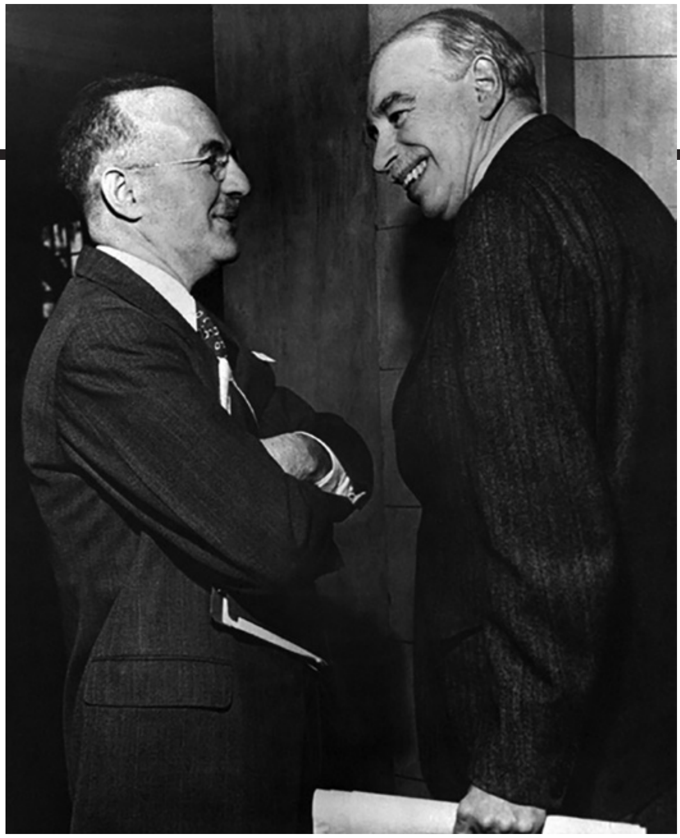
In May 1931, the failure of Creditanstalt, a large Austrian bank, raised doubts about the ability of Austria and Germany to service their World War I reparations debts, and the resulting anxiety sparked a conflagration that ultimately destroyed the interwar gold standard. Surges of money outflows forced country after country to suspend gold convertibility, ultimately forcing the United States off the gold standard in 1933. By 1937, fewer than five of the world's major economies remained on the gold standard. The speculative attacks and resulting currency collapses contributed significantly to the Great Depression.

Having lived through this chain of events, John Maynard Keynes — one of the main architects of the Bretton Woods agreement — came away with a highly skeptical view about the compatibility of free capital mobility with other valued objectives. "Keynes was quite uneasy about the volatility of international capital flows and the global financial cycle," says World Bank chief economist and Harvard professor Carmen Reinhart. "In the aftermath of the war, he viewed controls on capital flows as necessary to stabilize what was a very frail international system." Keynes viewed restrictions on international financial transactions as a price worth

Share this article: http://bit.ly/financial-repression paying for the sake of a stable environment conducive to free international trade of goods and services.

Moreover, Keynes believed that free capital mobility could interfere with a crucial tool of domestic macroeconomic management: the ability to conduct an independent monetary policy. History told him that, in order to maintain a fixed exchange rate in the face of free capital mobility, a central bank must be willing to adjust domestic interest rates in response to changing international financial conditions, thereby sacrificing monetary independence.

The Bretton Woods system effectively operated as a fixed exchange rate system — with countries other than the United States pegging their exchange rates to the dollar, and the United States pegging the dollar to gold at $35 an ounce. The system specifically allowed countries to place foreign exchange controls on capital account transactions, placing greater emphasis on the desirability of maintaining foreign exchange convertibility for current account transactions.



John Maynard Keynes (right) and Assistant U.S. Treasury Secretary Harry Dexter White, seen here in March 1946, were two of the main architects of the Bretton Woods system.

IMAGE COURTESY: INTERNATIONAL MONETARY FUND

RATIONING SCARCE CAPITAL IN EUROPE AND JAPAN

Capital controls were a widespread feature of postwar Europe. Across the continent, U.S. dollars were in short supply, particularly in the early postwar years, and capital controls were seen as a way to keep scarce capital from fleeing abroad. The controls allowed countries greater autonomy to set domestic interest rates and facilitated a host of policies that allowed governments to influence the allocation of funds across sectors in their domestic economies.

With regard to the intensity of government intervention in financial markets, France and Germany represented two ends of the European spectrum. Successive French governments took a highly hands-on approach to the allocation of credit. In 1945, the French government passed legislation that nationalized the country's largest banks and authorized the government to direct the economy-wide volume, distribution, and terms of credit. This was achieved through a variety of administrative means. In the early postwar period, the government ranked economic sectors from A to E, giving priority to bank loans for the "indispensable equipment" of category A and discouraging loans to finance the "superfluous economic activities" of category E. In addition, French banks were required to hold minimum amounts of government debt as reserves.

Germany took a much less interventionist approach and liberalized its comparatively light system of domestic credit controls as early as 1967. Controls on bank deposit and lending rates were ultimately seen by the German government as inefficient and impractical to administer. The French backed away from controls later, liberalizing domestic financial markets extensively in the 1970s and 1980s.

For the most part, capital controls were abandoned by the major European countries during the 1980s. The growing international reach of European companies had made capital controls more difficult for authorities to enforce, and the growing sophistication of financial markets had made controls easier to elude. "Capital controls could not survive too long after financial markets were liberalized and new financial products were designed to circumvent the controls," says Reinhart. Nevertheless, some capital controls were continued, including bans on the foreign acquisition of companies that were viewed as strategically important.

As in Europe, Japan adopted policies to administratively ration scarce capital in the immediate aftermath of World War II. The country adopted an outward-looking economic strategy that directed credit to export-oriented firms through highly regulated banks. Japan also imposed strict controls on cross-border financial transactions. The subsequent liberalization of the controls in the 1970s and 1980s coincided with the growth of Japanese firms' international activities, which made capital controls more burdensome and easier to circumvent.

FINANCIAL REPRESSION IN THE UNITED STATES

Financial repression as a tool of government finance in the United States goes at least as far back as the Civil War when, under the National Bank Act, banks were required to hold U.S. government securities as reserves in order to receive national charters. Policies that arguably amounted to financial repression were pursued again during World War II. Widespread rationing of consumption goods and restrictions on consumer credit boosted savings and, combined with war bond drives, facilitated the selling of government securities.

These wartime policies were complemented by the Fed's 1942 agreement with the U.S. Treasury to peg interest rates on short-term government bonds at the extremely low rate of three-eighths of a percent. The Fed maintained the interest rate peg until well after the war, ending the arrangement with the Treasury-Federal Reserve Accord of 1951.

Policies of financial repression became increasingly important in the United States during the 1960 and 1970s, and their role was intimately tied to the Bretton Woods system — its growing and unsustainable imbalances, its demise, and the Great Inflation that followed. Whereas the immediate postwar period was marked by dollar shortages among the major non-U.S. economies, the "economic miracles" of Germany, Japan, and other countries dramatically changed the picture. By the 1960s, Japan and Germany were running persistent current account surpluses, and the United States found it increasingly difficult to maintain the dollar's $35-an-ounce peg to gold.

To sustain the peg while maintaining the latitude for discretionary monetary policy, the United States imposed a new type of capital control in 1963 called the Interest Equalization Tax. The measure attempted to stem capital outflows from the United States by placing a 1 percent tax on foreign bonds sold in the U.S. market (the tax was later extended to short-term bank loans to foreigners). This was followed by various executive branch efforts to improve the U.S. balance of payments, including the use of "moral suasion" to put pressure on U.S. firms to repatriate funds and on U.S. allies to forgo converting their dollar holdings into gold. Despite all of the fingers in the dam, the Bretton Woods system of pegged exchange rates ultimately gave way.

As inflation and U.S. Treasury rates increased during the 1970s following the collapse of Bretton Woods, the distortionary effects of U.S. interest rate ceilings, known as Regulation Q ceilings, became more pronounced. Authorized by the banking acts of the Great Depression, Regulation Q prohibited banks from paying interest on demand deposits (such as checking accounts) and allowed the Fed to set interest rate ceilings on bank time and savings deposits. Originally, there had been several motivations for Regulation Q, but two of the more important goals were to restrain speculative competition among banks and to encourage country banks to lend more in their communities and divert smaller amounts of funds to deposits at money-center banks.

Many financial institutions and relatively wealthy savers found ways to circumvent Regulation Q ceilings and earn higher interest rates through the eurodollar market, repurchase agreements, and money market mutual funds. But these innovations created an uneven playing field. They were generally inaccessible to smaller savers, who were therefore deprived of billions of dollars in potential interest payments. They also put depository institutions at a competitive disadvantage. By the early 1980s, it was broadly recognized that Regulation Q had outlived its usefulness, and Congress passed legislation to phase it out.

By some definitions, however, other financially repressive policies have remained in place. For example, government-sponsored enterprises such as Fannie Mae and Freddie Mac continue to exert a powerful influence on the supply and demand for credit in the United States. To many economists, this counts as financial repression, despite these institutions' goal of promoting broad homeownership.

MIXED EMERGING MARKET EXPERIENCES

During the 1950s and 1960s, many Keynesian economists maintained a skeptical view of the role of free capital markets in the economic development process. Against this intellectual backdrop, many emerging markets took a highly interventionist role in financial markets. Brazil, for example, pursued a policy mix known as "import substitution." The idea was to preserve scarce foreign exchange reserves and increase economic independence by developing domestic industries to produce goods that could serve as substitutes for the country's imports. To pursue this goal, the Brazilian government adopted a wide set of policies associated with financial repression, including capital controls, domestic interest rate controls, and a highly hands-on approach to domestic capital allocation.

In retrospect, this policy mix has been widely deemed a failure. "Today, many Brazilian economists are extremely allergic to the idea of financial repression," says Richmond Fed economist Felipe Schwartzman, a native Brazilian. "In Brazil, financial repression has gone hand-in-hand with industrial policy that has proved to be extremely inefficient over the long run."

Liberalization policies were pursued in many emerging markets in the postwar period, but the results were not always positive. Carlos Diaz-Alejandro of Columbia University analyzed several unsuccessful cases in his 1985 *Journal of Development Economics* article "Good-Bye Financial Repression, Hello Financial Crash." Chile, after privatizing its banking sector and liberalizing capital controls in the 1970s, had experienced rapid increases in capital inflows and domestic credit. As the title of the article suggests, this all ended badly. Chile became engulfed in banking and debt crises as global financial conditions dramatically worsened in the early 1980s.

In light of these failed liberalization episodes, economists devoted a great deal of effort to trying to understand the necessary conditions for successful liberalization and the best ways to sequence the policies. Some economists stressed the need for solid legal and regulatory superstructures; others recommended that domestic financial market liberalization precede capital account liberalization.

To this day, economists hold divergent views on the efficacy of capital controls. The International Monetary Fund (IMF) has acknowledged that controls on capital inflows can be a useful policy tool to protect emerging markets from destabilizing inflow surges, but the institution has generally not encouraged their use as a practical matter. As for controls on capital outflows, there is a great deal of evidence that suggests that they are often evaded and provide little long-term relief in the face of persistent macroeconomic imbalances.

The trend toward capital account liberalization has been reflected in the diminishing numbers of emerging market countries with parallel foreign exchange markets (which, like black markets, arise in response to capital account restrictions). But the tools of financial repression are still evident in many emerging markets. In China, a prime example, low administered nominal interest rates continue to combine with inflation to provide cheap funding for government-owned enterprises — a policy mix that is complemented by capital controls.

A TOOL OF DEBT LIQUIDATION

In many countries during 1945-1980, financial repression effectively lowered the real returns to government debt holders and helped governments reduce their debt-to-GDP ratios, according to research by Reinhart and M. Belen Sbrancia of the IMF. Based on their calculations, real returns on government debt were negative in many countries over 1945-1980. The real returns to bond holders averaged -0.3 percent in the United States, and real returns were even lower on the bonds of those European governments that had been particularly ardent practitioners of financial repression, coming in at -6.6 percent in France and -4.6 percent in Italy. Real returns in Argentina over the period were a confiscatory -21.5 percent per year.

The researchers' analysis highlights a measurement problem: In practice, it is hard to determine the extent to which these low real rates were caused by distortionary financial controls, such as interest rate caps, versus how much they were caused by inflationary surprises. "It is very difficult to decompose the two effects causing low real returns," says Reinhart. "That is why I divide the period into two eras. The early postwar era was the heyday of financial repression, and interest rate caps and low nominal rates were the main mechanism. Then in the 1970s, it was also driven by inflation surprises."

And this is not just a measurement question. It also raises an important conceptual issue. Ever since McKinnon and Shaw, financial repression has been associated with inflation, and in practice the two have often gone hand-in-hand to create low real returns on financial assets. Yet in important ways, they are distinct. In principle, it is possible to have financial repression without inflation, and it is also possible to have inflation without financial repression.

REEMERGENCE?

Concerns about a reemergence of financial repression have been raised by the cumulative effects of the 2007-2008 global financial crisis, the European debt crisis, and the COVID-19 pandemic. In Europe, the process of placing public debt at below-market rates has arguably been underway for some time. Between 2007 and 2013, domestic banks in eurozone countries more than doubled their holdings of government debt, and it looks like the buildup has not been completely voluntary. "A common complaint I have heard from private bankers is that they were being leaned on by their governments to buy at debt auctions," says Reinhart.

In the United States, banks are also holding vastly increased levels of government debt, largely due to the 2014 implementation of the Liquidity Coverage Ratio (LCR), which requires banks to hold certain levels of high-quality liquid assets. The LCR was mostly motivated by macroprudential considerations, but policies usually end up having side consequences, and one of the side effects of the LCR is that it has substantially increased banks' demand for U.S. government debt obligations, including Treasury securities and reserves.

Has this contributed to a recent trend toward lower interest rates in the United States? Reinhart believes this to be the case. Other economists prefer a prominent alternative explanation — secular stagnation — which posits that low interest rates mostly reflect an aging demographic profile and disappointing productivity growth. To this, Reinhart counters that "they are not mutually exclusive."

Regardless of the causes of recent low interest rates — and of course, the Fed's countercyclical monetary policy is itself a major factor — in some ways today's situation appears to be quite distinct from the early postwar period. "During World War II, it was different," says Schwartzman. "Treasury rates were kept low with the explicit goal of facilitating deficit finance. I wouldn't want to call today's low interest rates financial repression. That would be a bridge too far." **EF**

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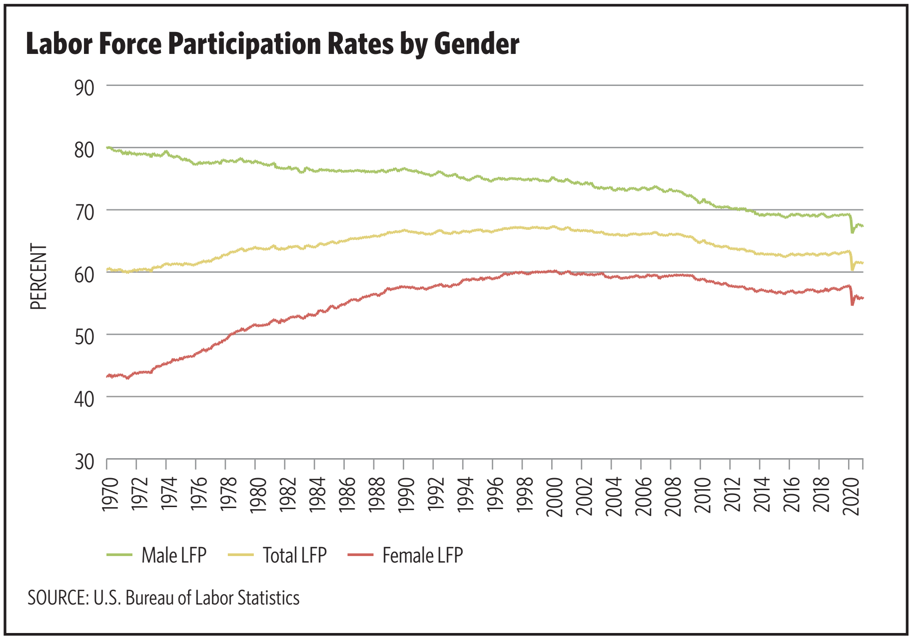
BY LAURA DAWSON ULLRICH

Male Labor Force Participation: Patterns and Trends



Over the past 50 years, male labor force participation in the United States has fallen over 10 percentage points, from 80 percent in January 1970 to 69 percent in January 2020. During the COVID-19 pandemic, it has fallen further. Over the same half-century, the male share of undergraduate college enrollment has fallen considerably as well, from 58 percent to 44 percent. What are the factors behind these declines? What do these numbers look like across the Fifth District, and what might the future hold?

The term "labor force participation," or LFP, is used often in economic discussions. Simply put, the labor force is defined as those who are working or actively looking for work. The LFP rate is defined, in turn, as the percentage of the civilian noninstitutional population ages 16 and older that is in the labor force. (The civilian noninstitutional population excludes individuals who are active-duty military, imprisoned, or confined to residential care facilities, such as nursing homes.)

This half-century span can be divided into two periods for LFP. First, the LFP rate in the United States grew steadily beginning in the late 1960s as women entered the labor force in larger numbers. In January 1970, the national LFP rate stood at 60 percent; 30 years later, in January 2000, it peaked at 67 percent. The growth over those three decades was driven by a 17 percentage point climb in female LFP — from 43 percent to 60 percent — while male LFP declined over the same period by nearly 5 percentage points. (See chart.)

Since the peak in January 2000, the national LFP rate has fallen gradually from 67 percent to 63 percent in January 2020. Both male and female LFP fell between 2000 and 2020, with female LFP falling 2.3 percentage points during that period and male LFP falling 5.8 percentage points. And then there was COVID-19. The pandemic brought numerous shocks to the labor market, including a significant shock to LFP. After a low of 60 percent in April 2020, early in the lockdown period, the LFP rate has recovered slightly to 61 percent as of January 2021. Since the pandemic began, the female LFP rate has taken a slightly larger hit than the male LFP rate, falling 2.1 and 1.8 percentage points, respectively, between January 2020 and January 2021.

MALE LFP IN THE FIFTH DISTRICT

Are these patterns similar in the Fifth District? Examining state-level LFP data between January 1976, when state-level LFP was first reported, and February 2021 reveals major differences in trends among Fifth District jurisdictions. West Virginia's LFP was far below that of the other Fifth District jurisdictions in 1976, with a rate of 52 percent, while the other states and the District of Columbia ranged between a narrow band of 65 percent to 67 percent. By March 2020, right before the COVID-19 pandemic was felt in LFP, West Virginia had increased its LFP rate to 57 percent — a marked increase, though still lower than the other Fifth District jurisdictions. The range of the others had widened significantly, from 59 percent in South Carolina to 73 percent in the District of Columbia.

Second, South Carolina and North Carolina saw significant decreases in LFP between the national peak in the LFP rate in January 2000 and March 2020. While most other states saw slight increases or decreases of 1.6 percentage points in the LFP rate over the 20-year period, North Carolina and South Carolina saw declines of 7.7 and 7.6 percentage points, respectively. Conversely, the

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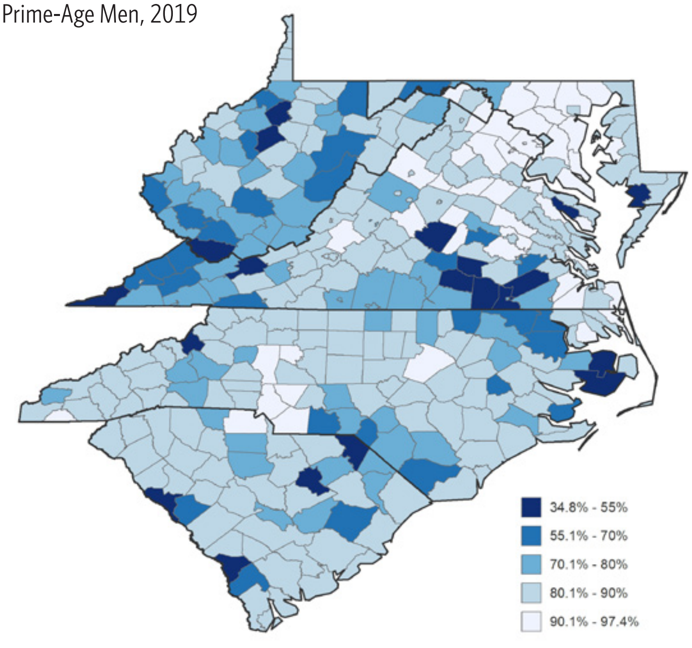
Labor Force Participation Rate

Prime-Age Men, 2019



SOURCE: American Community Survey 2019 5-year estimates

District of Columbia saw an increase in the LFP rate of 5.2 percentage points over the same period.

While the overall LFP rate is helpful in looking at changes in the labor market, there's a narrower statistic that can be more informative. Studies of LFP often focus on prime-age LFP, which limits the population to those ages 25 to 54. These individuals are less likely to be retired or in school; therefore, prime-age LFP focuses directly on those who are most likely to be working or seeking work. As with the overall LFP rate, the prime-age LFP rate peaked in 2000 at 85 percent. The prime-age male LFP rate, which was 96 percent in January 1970, had fallen to 89 percent 50 years later in January 2020.

Within the Fifth District, the prime-age male LFP rate varies considerably by geography. (See map.) At the low end, in 2019, there were 10 counties in the Fifth District that had prime-age male LFP rates below 50 percent. These counties were spread across all five of the Fifth District states, with one each in Maryland and North Carolina, two in South Carolina and West Virginia, and four in Virginia. The main characteristic that sets these counties apart is that they're rural. Eight of the 10 are in very rural areas, and the other two are in the rural outskirts of more populated towns.

In contrast, most of the counties with prime-age male LFP above 90 percent are in the more populated metropolitan statistical areas (MSAs) within the District, such as York County, Va., in the Virginia Beach-Norfolk-Newport News MSA and Loudoun County, Va., in the Washington-Arlington-Alexandria MSA. Across the Fifth District, more rural counties tend to have lower prime-age male LFP rates, with an average of 68 percent in the most rural counties compared to 89 percent in the most urban counties.

From a statewide perspective, West Virginia's prime-age male LFP rate in 2019, 79 percent, was the lowest not only in the District, but also in the entire United States, while Maryland's, at 90 percent, was the highest in the District. Overall, the prime-age male LFP rate in the Fifth District declined slightly between 2010 and 2019.

REASONS FOR THE DECLINE

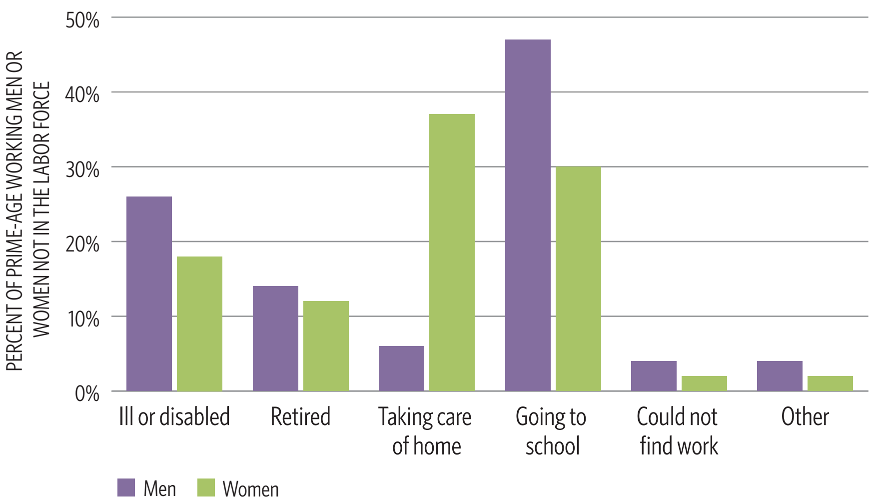
The reasons for the decline in male LFP have been widely examined in both the popular press and academic literature. The general consensus of research is that multiple factors are involved, including a shift in U.S. industry structure, a decline in male educational attainment, delayed family formation, the rise of substance abuse, and heavy use of video games.

To be sure, some of the decline in male LFP can be explained by the aging of the U.S. population. The median age of male Americans increased from 34 years old at the peak of LFP in 2000 to 37.2 years old in 2019. The aging of the baby-boom generation is increasing the percentage of the population that is over age 65, and therefore lowering the percentage of males who are in the labor force. As noted earlier, however, prime-age male LFP, which is limited to those ages 25 to 54, has also been dropping. Between 2000 and 2019, prime-age male LFP fell from 92 percent to 89 percent, indicating that younger men are also now less likely to be in the labor force. Since the beginning of the pandemic, prime-age male LFP has fallen to 87.6 percent.

A look at data from the 2020 Current Population Survey gives insight into the reasons why prime-age men and women are not working. (See chart on following page.) The reasons reported vary notably by gender. While women most frequently say they are not working due to taking care of the home or children, men are more likely to report they are not working due to attending school or being disabled or ill. These data are self-reported; respondents saying they are attending school doesn't mean they are necessarily enrolled. In some cases, it could reflect simply a desire to return to school. The definitions may be vague as well. For example, pain or an illness that prevents one person from working may not prevent someone else from working.

In light of these data, much of the literature on this topic discusses the effect that illness, disability, and addiction have on prime-age LFP. Many of those receiving disability payments via Social Security are receiving them for ailments such as mental health disorders and disorders that occur due to long-term obesity and drug or alcohol abuse. Data from the Social Security Disability Program's 2019 annual report show that 35 percent of Social Security Disability beneficiaries are disabled due to a mental health disorder, with mood disorders most common. An additional 30 percent of beneficiaries have disabilities associated with a musculoskeletal disorder, many of which are due to obesity. While disability and LFP are

Reasons Prime-Age Men and Women Are Not Working



NOTE: Includes men and women ages 15-64 who were out of the labor force in 2020.
SOURCE: Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS), 2020

clearly correlated, it may be difficult to determine which is the cause and which is the effect.

A 2017 Brookings Institution report investigated the reasons for the decline in male LFP. While acknowledging there is much we still don't know about the causes, the authors pointed out both demand and supply side issues. On the demand side, the decline in manufacturing employment, which has fallen over 30 percent in the past 35 years, has undoubtedly caused structural unemployment and exit from the labor force for noncollege-educated males who dominate that sector. Work by Daron Acemoglu and David Autor of the Massachusetts Institute of Technology and others has shown that much of the decline is due to increased technology, automation, and import competition. On the supply side, we might see a skills mismatch. While employment in manufacturing has fallen, employment in other sectors such as health care has increased dramatically. Workers may lack the skills needed to shift from one sector to another. In addition, the Brookings report noted that male workers who formerly worked in manufacturing may not want jobs in these growing sectors because pay is lower and the occupations are often female-dominated. Safety nets, such as disability or other nonemployment income, could also inhibit labor supply.

THE CULTURE FACTOR

Data from the 2019 American Time Use Survey (ATUS) show that men without employment spend just 49 minutes more each day than full-time employed men on "household activities," and they spend even less time than full-time employed men on "caring for household members." By far the largest difference in time use between working and nonworking men is the amount of time spent on "leisure and sports." In fact, nonworking males spend over 3.6 more hours *per day* on these activities than men with full-time employment.

Computer and video game technology isn't new, but it has improved rapidly over the past two decades. Four researchers have concluded in a recent article in the *Journal of Political Economy* that technological improvements in video gaming and computing explain part of the drop in men's working hours. The researchers found, first, that the number of market hours worked by men has fallen most substantially in the 21- to 30-year-old age group. They found that the percentage of men in that age group working zero hours nearly doubled between 2000 and 2016. Perhaps shockingly, they also found that recreational computer time for males ages 21 to 30 between 2004 and 2017 increased by 60 percent. After analyzing data from the ATUS, they estimated that nearly three-quarters of the decline in hours worked by men in the 21- to 30-year-old age group, relative to older men, can be explained by the technological improvements in video games and computer-based leisure.

Other cultural changes are at play as well, such as the increase in the average age of marriage and parenthood. According to the U.S. Census Bureau, the median age for first marriage for men increased from 23.2 years old in 1970 to 30.5 years old in 2020. In addition, mean paternal age has increased among all races and educational attainment groups. Men may be under less pressure to earn income without a family to help support. A U.S. Census Bureau working paper titled "Why Bother? The Effect of Declining Marriage Market Prospects on Labor-Force Participation by Young Men" by Ariel Binder examined how changes in the marriage market have impacted the economic benefits of marriage as well as young men's employment choices. She concluded that improvements in female employment opportunities have lowered the benefit of marriage for women, especially to noncollege-educated men. Her results indicate that improvements in female employment opportunities and the reduction in marriage rates can explain roughly one-quarter of the decline in LFP rates for noncollege educated men.

A recent article in the journal *Social Science & Medicine* by Carol Graham of Brookings and Sergio Pinto of the University of Maryland examined the well-being of adults out of the labor force. They found that the well-being of this group varies significantly across demographics, with females reporting higher well-being than men and minority males reporting higher well-being than white males. White males out of the labor force report the lowest levels of health and higher levels of pain than other demographic groups. Prime-age white males report worse health than younger and older age categories, indicating that health may be one of the reasons they have left the labor force.

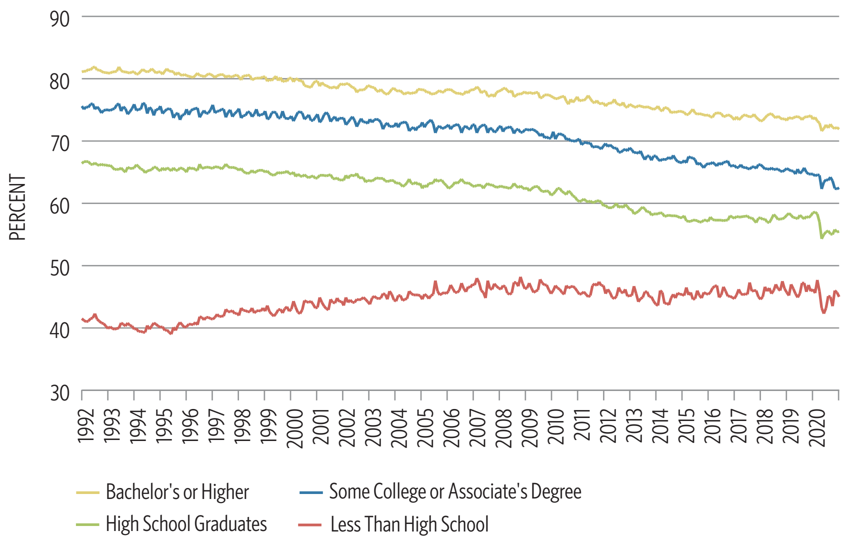
When the authors dug further, they found that the poor health and well-being of prime-age white males out of the labor force is driven by those with lower educational attainment and those between ages 35 and 54. The relationship between pain and work is likely also related to higher opioid use, as documented in a 2017 paper by Alan Krueger of Princeton University who found that nearly 50 percent of prime-age men out of the labor force reported taking pain medication on a daily basis, with almost two-thirds of it being prescription pain medication.

Incarceration is another issue that is frequently mentioned in discussions of men who are out of the labor force. A 2014 survey indicated that a third of nonworking prime-age males have criminal records. A criminal record makes individuals ineligible for many jobs, and it makes employers hesitant to hire. A 2015 paper by University of Michigan economist Michael Mueller-Smith used data from Harris County, Texas, to show that each additional year of incarceration reduces post-release employment by 3.6 percentage points. Additionally, he found that reemployment for those with felony charges, among those who were working before the charges, declines by at least 24 percent in the five years after the worker's release. These reductions in employment opportunities also result in decreased income potential. A recent Richmond Fed *Economic Brief* by Grey Gordon and Urvi Neelakantan concluded that males without a high school diploma who are incarcerated for the first time will face, on average, a 50 percent loss in lifetime income.

EDUCATIONAL ATTAINMENT AND LFP

There is a strong relationship between educational attainment and participation in the labor force. On average, increased levels of education result in increased wages, and therefore increase the opportunity cost of exiting the workforce. While LFP rates for workers who have graduated high school have fallen recently, those with more education continue to maintain higher LFP rates. (See chart.)

Male Labor Force Participation Rate by Educational Attainment



SOURCE: U.S. Bureau of Labor Statistics

The wage premium for those with a college degree or higher has grown significantly in recent decades, while men with a high school education have seen the most significant decline in LFP rate. One interesting point to note is that the gap in LFP rates between college graduates and those without a high school degree has narrowed considerably, while the gap between college graduates and those with a high school diploma has widened. Binder and Bound's 2021 *Journal of Economic Perspectives* article points out that between 1973 and 2015, real hourly wages for prime-age men with just a high school degree fell by 18.2 percent.

These trends occurred during a time when the availability of jobs for high school educated men was declining. In the late 1970s, nearly 30 percent of all men with a high school degree worked in manufacturing. By 2017, that figure had dropped to 12 percent. Of course, some manufacturing production has shifted to other countries. But in the last 30 years, the contribution of manufacturing output to U.S. GDP increased at the same time that employment in the sector fell, and automation eliminated many lower-skilled jobs previously performed by workers without a college degree. There has also been a substantial decline in mining employment in the Fifth District, which employed a large number of non-college-educated men.

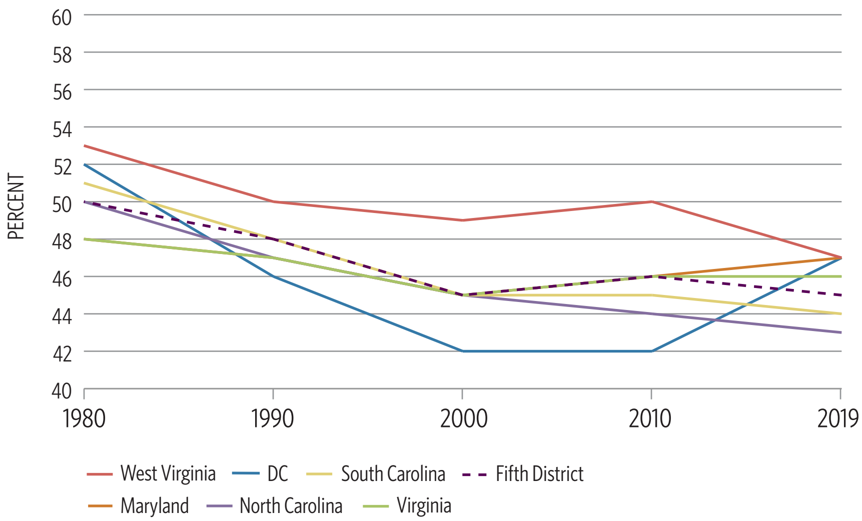
So that leaves us with the question, have men begun to seek the education or retraining that will provide them access to new jobs?

MALE COLLEGE ENROLLMENT

At the same time available jobs for men without a college degree has diminished and wages for lower-skilled jobs have remained stagnant, educational attainment has been increasing in the United States. Since 1980, the percentage of men with a bachelor's degree or higher has risen from 21 percent to 35 percent. While men's college attainment increased, women's increased faster: The percentage of women with a bachelor's degree or higher has climbed from 14 percent to 37 percent over the same period. In fact, 2014 was the first year in which a higher percentage of females than males held at least a bachelor's degree.

In the Fifth District, college enrollment patterns have mostly followed those seen across the United States. Since 1980, even though overall enrollment has grown, the percentage of enrolled students at public four-year institutions who are male has fallen in

Share of Full-Time Undergraduate Students Who Are Male (Public Four-Year Institutions)



SOURCE: National Center for Education Statistics, Integrated Postsecondary Education Data System

each of the Fifth District jurisdictions, with an overall decline of almost 5 percentage points. (See chart.)

Until the late 1970s, both community colleges and four-year colleges were male-dominated. Today, both sectors have enrollments that are majority female. While the percentage of males enrolled at community colleges has increased slightly over time, women still make up more than 60 percent of District community college enrollment.

There is a real risk that the percentage of males enrolled in higher education will continue to fall across the Fifth District and the United States, especially in the near term. New data from the National Student Clearinghouse show that male enrollment was hit much harder by the COVID-19 pandemic than female enrollment across all types of institutions. In fall 2020, overall male enrollment declined by 6.9 percent while female enrollment fell by only 2.6 percent. The difference was most pronounced at public four-year institutions, where male enrollment fell 7.4 times as severely as female enrollment.

INITIATIVES TO IMPROVE MALE OUTCOMES IN EDUCATION AND THE WORKFORCE

Some states have created specific initiatives to recruit more male students into institutions of higher education and the labor force. Strategies include providing flexible schedules and class formats, increasing apprenticeship programs, and giving students academic credit for previous work experience.

A 2016 report from the Council of Economic Advisers recommended several policy initiatives that could improve male LFP. It recommended working to increase the "connective tissue" in the labor market — that is, programs that link workers to jobs. This involves using community colleges, and other institutions, to provide pathways into in-demand jobs. Community colleges across the Fifth District are focused on this effort, and programs like North Carolina's Career Pathways and South Carolina's Apprenticeship Carolina are working to provide a more direct path from education to employment.

One innovative program is that of the Louisiana Community and Technical College System, which has incorporated some unique events to try to garner attention from potential male students. An example is a series of eight country music concerts at Louisiana's community and technical colleges done in partnership with Country Music Television. When attendees entered the concerts, they passed large posters advertising jobs that require a community college education (such as welding) and the wages that can be earned in the field. Those who enrolled in the local community or technical college after the event were eligible for a $1,000 scholarship jointly funded by Country Music Television and the community and technical college system.

Some other programs focus on males who have criminal records. For example, Virginia's CARES program works with employers and ex-offenders to assist with successful reentry into the workforce. State programs like these typically use Federal Bonding Program fidelity bonds to motivate employers to hire these more at-risk individuals. While these programs have been in existence for decades, they could be expanded or adjusted to improve outcomes.

There are other policies related to incarceration that could significantly affect male labor outcomes, such as Maryland's 2017 repeal of most of its mandatory minimum drug sentences and Virginia's 2020 decriminalization of marijuana possession. Reducing the number of criminal convictions may significantly improve job prospects for many people, the majority of whom are male.

CONCLUSION

It is difficult to assess the relative importance of the factors leading to the decline in male LFP as there are many, and the interaction among them is complicated. Some of the decline is tied to structural changes in the economy. Some of it is tied to the policy environment, such as the availability of disability benefits. In addition, however, there is little doubt that it is also being driven by cultural phenomena.

Innovative solutions will be necessary to change the trajectory of the long-term decline in male LFP. Job training and upskilling programs may solve part of the problem, but they are unlikely to be sufficient in themselves. A deeper dive into the habits of men and how social and cultural norms continue to evolve will be essential to improve the labor force participation of men in the future. **EF**

BY CHARLES GERENA

The Promised Land

You may not have heard of Soul City, a residential community developed by lawyer and civil rights activist Floyd McKissick in rural Warren County, N.C., in the late 1970s. But much has been said about it, including in a 2016 documentary, countless articles in local and national press, and in several scholarly papers. It was also the subject of an article in this magazine (see "Doing Development Differently," *Econ Focus*, Third Quarter 2017).

Soul City: Race, Equality, and the Lost Dream of an American Utopia, a new book by Thomas Healy, presents fresh insights on the history of this unique experiment in economic development. Healy teaches constitutional law at Seton Hall University and was a reporter for the Raleigh, N.C.-based *News & Observer*; the paper's coverage of Soul City in 1975 helped seal its fate four years later.

Soul City had broad support when McKissick unveiled his concept for a self-sustaining community developed by blacks at a press conference in 1969, but it also had its detractors from all sides of the rhetorical spectrum. Some white residents of Warren County were fearful of creating a community where black Southerners who had migrated north could return in large numbers, threatening to shift the balance of political power. Integrationists didn't like the idea of blacks developing their own city where they would constitute the majority of the population. Progressives felt that McKissick's plans relied too much on capitalism.

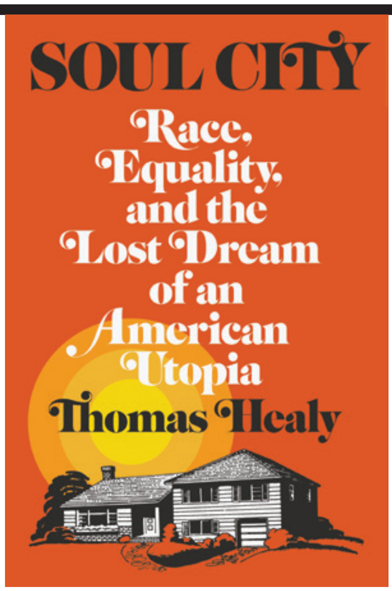
On this last issue, McKissick's response was pointed — it was past time for black Americans to take their share of their country's capital and wealth. "Slavery taught us *who* had leisure, *who* had freedom, *who* had dignity," McKissick asserted at the 1969 press conference. "Not the slave, but the slave-owner. Not the sharecropper, but the landowner. Not the employee, but the capital owner."

Providing some context for the creation of Soul City, Healy's book delves into the details of McKissick's life, from his early involvement in the civil rights movement to his leadership of the Congress of Racial Equality. For example, why did McKissick locate Soul City in Warren County? While the county was declining, it was within a region of North Carolina where industries like textiles and technology were growing and there was access to major highways and airports.

Also, why put so much effort into building Soul City in the middle of a former plantation, when so many black communities in urban areas were suffering? "McKissick had an answer to this question, too," writes Healy. "In his mind, there were psychological benefits to building something new, benefits that could spark the kind of creative, unconventional thinking that had inspired the civil rights movement itself."

Healy goes beyond previous accounts of Soul City, filling in some of the historical backdrop with a variety of characters — from Gordon Carey, a social justice activist and fledgling anarchist who became McKissick's right hand man, to Claude Sitton, an investigative reporter who earned his stripes covering the civil rights movement and later edited the *News & Observer* newspaper that tore into Soul City's credibility at a critical juncture in its development. But it is McKissick who takes center stage in Healy's story of vision meeting reality, of black power meeting systemic racism, of social entrepreneurism clashing with government bureaucracy.

The book also uses the lens of McKissick's ambitions to provide new perspectives on larger historical movements. For example, the lack of progress during the civil rights movement shifted efforts toward empowering blacks to control their own destinies, especially economically. McKissick recruited a leading black architectural firm to oversee Soul City's design, while Howard University offered its support.



SOUL CITY: RACE, EQUALITY, AND THE LOST DREAM OF AN AMERICAN UTOPIA

by Thomas Healy, New York: Metropolitan Books, 2021, 448 pages

The book also explores the realization that a new way of organizing cities was needed. After blacks migrated from the oppression of the South to northern cities like Baltimore, Detroit, and New York, they often found themselves mired in economic hardship. Uncle Sam tried and failed to deal with urban strife; private developers tried and sometimes succeeded, particularly in the cases of Reston, Va., and Columbia, Md. — with the help of a lot of capital. (See "The Making of Reston and Columbia," *Econ Focus*, Second/Third Quarter 2020.)

Where Reston and Columbia succeeded, Soul City failed. But that failure speaks volumes about government involvement in economic development as well as the inequalities that have become enshrined in our country's economic system. There are lessons to be learned for future efforts to help poor and minority communities. **EF**

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BY KARTIK ATHREYA

Financial Distress Falls Unevenly

On the surface, Americans appear to be doing well economically. Signs of financial distress — such as high delinquency rates — are not easy to see in much of the headline macroeconomic data. Indeed, the economy-wide saving rate actually increased during 2020 as consumption stalled and disposable income was boosted by increased fiscal transfers.

Aggregate indicators of credit performance have held up well. According to Equifax-New York Fed data, the overall consumer loan delinquency rate has declined during the pandemic. Home foreclosures have dropped to nearly zero, and very few mortgages have transitioned from "current" to "late" status. Consumer bankruptcy rates have also declined. Many relatively affluent people actually appear to have used the opportunity to *pay down* their credit card balances.

Perhaps these positive credit indicators are not surprising, given the large fiscal transfers and widespread use of loan forbearance programs at the encouragement of bank regulators. Moreover, it has been a fairly short time since the pandemic began to hit the economy hard in March 2020. So far, many individuals have been able to smooth consumption *and* continue to service their debts.

But, as with all things COVID-19, the headline numbers don't tell the whole story. The economic fallout of the pandemic has been highly uneven. Low-wage workers were the most severely affected at the outset, and their employment recovery since then has been comparatively sluggish. The number of jobs for workers with incomes less than $27,000 remained 30 percent below pre-pandemic levels, according to a recent survey. In contrast, employment for workers with incomes greater than $60,000 had fully recovered.

The disparity in outcomes has also played out along geographical lines. The COVID-19 pandemic has touched every corner of the United States, but the fallout has been particularly acute in areas with concentrations of people who already had been experiencing financial distress. Persistent financial trouble acted as a sort of "economic preexisting condition" that left many of these people especially vulnerable. Indeed, ongoing Richmond Fed research finds that shocks not only do greater harm to the consumption of those initially in distress, but also that initially distressed households actually suffered bigger declines in house prices during the Great Recession and in earnings during the early months of the pandemic.

"Headline indicators of consumer credit performance will almost surely hide the struggles of a not-small group of households."

Financial distress has also been more evident among people of color. For example, according to the latest Census Household Pulse Survey, black Americans made up 8 percent of people living in owner-occupied housing but constituted 15 percent of those who were not current on mortgage payments. Respondents who identified as Hispanic/Latino made up 12 percent of owner-occupied housing residents but 25 percent of non-current mortgages.

Rental arrears are another source of concern about consumers' financial health. "We were already seeing landlord-tenant evictions on the rise prior to the pandemic," said South Carolina Legal Services attorney Mark Fessler on a recent Richmond Fed *Speaking of the Economy* podcast. Eviction numbers declined after the onset of the pandemic, partly due to CARES Act provisions, but also partly because of eviction moratoriums issued by state courts and then by the Centers for Disease Control. Nevertheless, it appears that many renters have been evicted.

There have been at least two lasting fallouts from rental arrears and evictions. The first is that many consumers have built up substantial debts to their landlords. According to a recent Brookings Institution report, "Roughly 9 million renters have fallen behind on rent, with debts averaging $5,400 per household."

A second concern pertains to the credit histories of evictees. People with eviction filings on their records often have difficulty finding landlords willing to rent to them. According to Fessler, "The background check industry for housing has exploded over the last five years or so. If you have debt owed to a landlord, that may knock you off landlord A, B, or C's list. They may not want to rent to you if you were unable to pay your previous landlord."

Thus, as we look ahead at an economy that is likely to show strong aggregate performance, it will be important to keep in mind that such headline numbers — including, importantly, headline indicators of consumer credit performance — will almost surely hide the struggles of a not-small group of households. And this will likely hold despite the rapid and huge central bank efforts to support credit flows and vast transfers to broad swaths of households. In other words, many of the people who have been hardest hit by the pandemic may have miles to go before they see clear skies again. **EF**

Kartik Athreya is executive vice president and director of research at the Federal Reserve Bank of Richmond.

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CORPORATE TAXES AND BORDERS

Multinational corporations can be expected to change their behavior in response to changes in tax policy. That means proposed policy changes need to account for the different tax regimes that exist around the world — and the various strategies that corporations use to minimize their taxes globally. One approach is to try to harmonize tax systems across countries. History shows, however, that this type of cooperation is difficult to achieve.

INTERSTATES

The development of the Interstate Highway System starting in 1956 made the United States more mobile than ever before. This increased mobility has improved the quality of life for citizens and increased the speed and productivity of the transportation and shipping industries. Some economists raise concerns, however, about the trade-offs between highways and the economic growth of small towns.

HOW IS YOUR INFLATION DIFFERENT?

After remaining subdued for more than a decade, inflation is again a salient topic following the sizable monetary and fiscal stimulus of the past year. In theory, inflation is a generalized increase in price levels. But observed inflation differs across goods and services. That means inflation can affect the rich, the middle class, and the poor differently because they tend to buy different things. How do monetary policymakers decide which inflation statistics to pay attention to when setting policy?

MINIMUM WAGE

The pandemic's disproportionate effect on lower-wage workers added momentum to discussions about the minimum wage. Thirty states and the District of Columbia have adopted minimum wage levels that exceed the federal mandate, which was first enacted in the wake of the Great Depression. How have state and local minimum wage policies in the Fifth District evolved, and where do they stand now? What would a $15 federal minimum wage mean for employment and wage distribution in the district?

INTERVIEW

Ayşegül Şahin of the University of Texas at Austin on unemployment, job searching, and the decline in startups.

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How is the pandemic affecting students and their long-term success in the workforce?

This spring, the Richmond Fed sat down with educators and policymakers to discuss solutions to the challenges our communities are facing.

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