The rise of the US health-care sector over the past several decades has been remarkable. As Figure 1 [page 3, top] shows, in 1970, the country devoted slightly more than 6 percent of GDP to health care, about 1 percent more than other nations. Today, the nation devotes almost 18 percent of GDP to health care, which is larger than spending on cars, clothing, food, furniture, housing, fuel, and recreation combined — and is a full 8 percent above the average in comparable countries.

Health outcomes haven’t kept up, as shown in Figure 2 [page 2, bottom left]. US life expectancy was slightly below the average of comparable countries in 1980. Today it has fallen far below that of these other countries, with life expectancy actually declining for the first time in decades.

These striking facts have motivated a sharp increase in the quality and quantity of work in the NBER Health Care Program. From a handful of working papers in 1992, this program has grown to produce an average of more than 100 working papers a year in the last three full years. These papers reflect the larger interest of the economics profession in health issues. In 1990, the American Economic Review published just two articles about health; now it publishes about five a year. In the American Economic Journals in Economic Policy and Applied Economics, major new general-interest journals that cover health topics, about one in eight articles published in 2017 focused on health. The Health Care Program has expanded and drawn in a new generation of health economists.

In this review, I cover developments in the NBER Health Care Program over the last seven years. This has been a period both of substantial upheaval in the health-care sector and of rapid growth of studies of that sec-

*Jonathan Gruber is the Ford Professor of Economics at MIT. He is an NBER research associate and has been director of the bureau's Health Care Program for the past decade. Gruber was an architect of health care reform efforts in Massachusetts and consulted with the Obama Administration on creation of the Affordable Care Act.
The Affordable Care Act

The ACA is the most significant government intervention in the US health-care system since the introduction of Medicare and Medicaid. Moreover, it was introduced both in a data-rich environment in which many datasets can be used to analyze its impacts, and in a manner that generated quasi-experimental variation that can be used to convincingly estimate those impacts. In particular, the enormous expansion of the Medicaid program to all those whose income is less than 133 percent of the poverty line, which occurred only in a subset of states and over time in those states, provides a natural case study for understanding the impact of expanded insurance coverage. This has provided a wonderful environment for economic research. Health Care Program affiliates’ research on the ACA has covered a wide variety of areas, and has focused primarily on the impacts of the ACA on insurance coverage, health-care utilization, and health, as reviewed by Benjamin Sommers and me. 1 Studies show that the ACA clearly has expanded coverage [Figure 3] through provisions such as extending coverage of dependents up to age 26, expanding Medicaid, and subsidizing premiums in the new exchange. 2 Notable is the finding of that last paper that much of the increase in Medicaid enrollment was not from those who were newly eligible, but from those previously eligible who had now enrolled in the program.

There has also been a clear increase in health-care utilization in response to broadened insurance coverage. 3 Early studies have generally found positive impacts of the ACA on population health, but more work is needed to assess the long-term impacts on health status.

A particularly notable area of research on the ACA has been focused on the impact of the law’s provisions on labor market behavior, with mixed results. Research on a large restriction on health insurance coverage in Tennessee before the ACA showed an associated significant rise in labor force participation, suggesting that expansions under the ACA might reduce the supply of labor. 4 But studies of both the expansion of insurance to young adults 5 and the overall effects of the ACA exchanges and Medicaid exchanges 6 do not find significant impacts on labor supply.

2. M. Marit Rehavi, Yale
3. Laura A. Duanrud, Michigan
4. Edward Foster, Michigan State
5. Mark Glos, California, Los Angeles
6. Benjamin Hermalin, California, Berkeley
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One recent development in health economics is an ongoing integration with the field of industrial organization, allowing for new lessons about physicians (and other provider) market behavior. For example, Kate Ho and Ariel Palles find that when physicians are more highly “captured” (paid a fixed amount per patient, rather than receiving cost-based reimbursement), they are more likely to refer to lower-cost hospitals. Lawrence Baker, Kate M. Bundorf, and Daniel Kesler study the rapidly growing phenomenon of vertical integration among physicians, whereby generalists and specialists merge their practices; the researchers find that such integration raises prices for both types of physicians, particularly in less-competitive markets. Jeffrey Clemens and Joshua Gottlieb find that when private insurers set reimbursement rates for physicians, they closely follow the rates set by Medicare, although Clemens, Gottlieb, and Tima Laura Molnar find that private rates deviate most from Medicare when the Medicare rate differs strongly from the true marginal cost of the procedure.

Hospitals

Hospitals remain the largest single source of health-care spending, and this area of research on the economics of NBER researchers. A number of studies have attempted to measure and compare the efficiency of care delivery across hospitals. One recent study is the role of hospital market structure. Motivating interest in this area is the widely cited study by Zack Cooper, Stuart Craig, Martin Gaynor, and John Van Reenen that used newly available data to document the enormous variation in prices among hospitals for very similar procedures; they also find that prices are higher in less competitive markets.

Figure 4

Jill Horwitz, Charlene Hsuan, and Austin Nichols find that hospitals respond to a competitor’s adoption of intensive care services by adopting the same services, leading to duplication and higher costs. On the other hand, Gowrisankaran, Ariv Neo, and Robert Town find that hospitals’ market power is greatly constrained by their negotiations with managed care insurers, and Craig, Matthew Greenman, and Mark McClellan find that mergers between hospitals lead to lower input acquisition prices through better negotiating power. Investigating another important aspect of hospital market structure, Cory Capps, Dennis Castronovo, and Gary David find no evidence that nonprofit hospitals are more likely than for-profit hospitals to use extra resources from market consolidation to deliver charity care to uninsured people.

Pharmaceutical Economics

Prescription drug spending has become a larger share of health-care spending over the past few decades, growing from 5 percent of spending in 1980 to 10 percent today. This is partly due to the high cost of drug development, estimated at $2 billion or more annually. The enormous risk and returns associated with drug development have led to significant changes in the nature of patent protection provided when the drug is finally developed and is very short-lived.

Recent studies document that the financial resources available to pharmaceutical manufacturers determine the pace and nature of innovation, with somewhat differing conclusions. David Dranove, Craig Garthwaite, and Manuel Hermosa find that the introduction of drug insurance for elderly people under Medicare Part D led to the development of more drugs targeted to the elderly — mostly for diseases that already had multiple treatments.

On the other hand, Joshua Krieger, Danielle Li, and Dimitris Papanikolaou find that financial shocks to pharmaceutical manufacturers lead to the development of drugs that are more likely, in the sense that they differ more from previous discoveries. In either case, the returns to R&D are quite high. Pierre Azoulay, Joshua Gruff Zivin, Li, and Bhaven Sampat use idiosyncratic rigidities in the rules governing National Institutes of Health peer review to show that NIH funding spurs the development of private-sector patents: a $10 million boost in NIH funding leads to a net increase of 2.3 patents.

Heidi Williams and her coauthors have studied the incentives put in place by the US Patient system. Sampat and Williams find that gene sequences that are patented are more valuable than those that are not, and that controlling for this selection effect, on average, gene patents have no effect on follow-on innovation. At the same time, Eric Budish, Benjamin Roin, and William Williams find that innovations that develop with a long development period are less likely to continuously pay significant returns, indicating that the value of patient protection provided when the drug is finally developed is very short-lived.

A particularly notable feature of US health-care markets is the relatively unregulated multivectorial payer system, for which the US health-care market is the relatively unregulated multivectorial payer system. Private Financing of Clinical Trials and Patient Survival Rate: Share of funds that are primarily financed

Figure 5

Private Financing of Clinical Trials and Patient Survival Rate: Share of funds that are primarily financed

Source: Budish E., Roin B., Williams H., NBER Working Paper 19430

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On the other hand, Heather Kolander and Douglas Slavin have examined the implications of different forms of reinsurance and reinsurance adjustment factors that must be evaluated with these systems is insurer responses. For example, Michael Gareno and Timothy Layton show how insurers adjust their reinsurance adjustment factors to qualify for higher-risk adjustment payments. Finally, Benjamin Handel, Kolander, and Johannes Spinnewijn highlight the trade-off between choice inconsistencies and adverse selection, and the implications for insurance design.
International Comparisons

There is a long-standing recognition that the US system is an outlier in terms of health-care spending relative to GDP. This suggests that our nation has much to learn from other countries, and an array of studies has brought key lessons to the fore. A number have focused explicitly on comparing the US system with other nations. Currier and Adriana Lleras-Muney review the evidence from around the world on how education improves health outcomes.65 Alice Chen, Emily Oster, and Williams provide evidence that the steep gradient in infant mortality in countries with respect to US income is largely driven by post-delivery differences in care, particularly care delivered in the home.66 Michael Baker, Currie, and Francesca Schwellnus67 and, in another study, Currie, Schwellnus, and Josellin Thuilliez68 compare mortality inequality in the US with that in Canada, where welfare generosity in the form of public health outcomes has declined, and France, where inequality remains pervasive.69 Jillian Chown, Dranove, Garberwaite, and Jordan Keener compare health care prices between the US and Canada, finding that while the US pays much more for drugs, our physicians do not appear to earn more relative to the general skill differential in the US than in Canada.60

Further papers investigate policy interventions in other developed nations that may contain lessons for the US. Thomas Hoe, George Stoye, and I investigate a UK policy that imposes strict penalties on emergency rooms for long waiting times.71 We find that these incentives lead not only to shorter waiting times, with more use of the hospital and higher medical spending, but also to better health outcomes. [Figure 6] Hiroshi Shigekoa finds that reduced cost-sharing for elderly people in Japan leads to more use of both inpatient and outpatient care, with little impact on health but large reductions in out-of-pocket expenditures.72 Stephen Pichler and Nicholas Ziebarth report data from Germany and the US to document the importance of “presenseism,” whereby sick employees coming to work leads to more lost time for others, suggesting the value of providing sick leave to workers.73 A notable recent development is the rapid growth of work by health Care ates of the NBER's Health Care Program over the past seven years. These researchers are pushing the boundaries of knowledge in a wide variety of directions, and their efforts are likely to continue in the coming years. The ongoing implementation of the ACA provides a fruitful laboratory for studies of the role of insurance, while the continual threat of unaffordable increases in health-care costs will inspire new work on drivers of spending. The introduction of innovative new genetic therapies will motivate ongoing work on R&D and the financing of novel treatments. The increasing depth and diversity of new drug sources, in the US and around the world, makes ever more exciting research feasible.

Figure 6

The Effect of Education on Health Outcomes, by Country GDP

*Effects of Federal Policy to Insure Young Adults: Evidence from the 2010 Affordable Care Act Dependent Coverage Mandate*, Antwi Y, Moriya A, Simon K NBER Working Paper 18200, June 2012. (Return to Text)

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Research Summaries

The Economics and Politics of Market Concentration

Thomas Philippon

Business concentration and profit margins have increased across most industries in the United States over the past 20 years, a trend that has been accelerating. Until recently, these trends were analyzed along the same lines as declines of the labor share and private investment. The ratio of after-tax corporate profits to value added has risen from an average of 7 percent from 1970 through 2002 to an average of 10 percent in the period since 2002. Firms used to reinvest about 30 cents of each dollar of profit. Now they only invest 20 cents on the dollar.

Good versus Bad Concentration

A crucial research question is whether these trends reflect market power and rent seeking or more benign factors, such as a shift toward intangible assets with returns-to-scale effects. The main difficulty is that the relationship between concentration and competition is ambiguous. Concentration and competition are positively related when shocks to entry costs play a dominant role in the data. For example, lower search costs make it hard for inefficient producers to survive, force them to merge or exit, and lead to higher concentration. Increasing productivity differences among firms—often embedded in intangible assets—can play a similar role. If these explanations are correct, concentration should be negatively related to productivity and investment.

Some industries fit the efficient concentration hypothesis, while others fit the rent-seeking pattern rather well. It has become increasingly concentrated, and German Gutiérrez and I show that US consumers today pay twice as much for cell phone and broadband internet services as citizens in nearly all other developed countries.

Concentration and competition are negatively related when shocks to entry costs play a dominant role in the data. This can result from changes in antitrust enforcement, barriers to entry, or the threat of predatory behavior by incumbents. If these explanations are correct, concentration and competition play a dominant role in the data. For example, lower search costs make it hard for inefficient producers to survive, force them to merge or exit, and lead to higher concentration. Increasing productivity differences among firms—often embedded in intangible assets—can play a similar role. If these explanations are correct, concentration should be negatively related to productivity and investment.

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Some industries fit the efficient concentration hypothesis, while others fit the rent-seeking pattern rather well. It has become increasingly concentrated, and German Gutiérrez and I show that US consumers today pay twice as much for cell phone and broadband internet services as citizens in nearly all other developed countries.
The financial crisis of 2008–09 intensified interest in how relationships within the financial system can amplify and transmit shocks. At a basic level, the failure of small banks to roll over large commercial real estate loans based on real estate prices by scaling up lending and leverage, which fueled further increases in asset prices. When asset price growth slowed, problems at other money market mutual funds, including many that had little or no direct exposure to Lehman Brothers or the Reserve Primary Fund. Moreover, as the interbank lending market became more segmented, the system can amplify and transmit shocks. At a basic level, a unifying theme is using unique historical data to study dynamics that are obscured or hard to isolate in modern data. Jaremski received a BA in economics, classical civilizations, and business administration from Austin College in 2006 and his PhD in economics from Vanderbilt University in 2010. Before joining Utah State, he was an associate professor at Colgate University and has held visiting positions at Yale University and the Office of Financial Research at the US Treasury. He grew up in Dallas, Texas, and currently lives in Logan, Utah, with his wife. He enjoys hiking and swimming during the summer, and board games and movies during the winter.

Interbank Network Risk, Regulation, and Financial Crises

Matthew S. Jaremski

The Great Reversal: How America Gave Up on Free Markets

The financial crisis of 2008–09 intensified interest in how relationships within the financial system can amplify and transmit shocks. At a basic level, the failure of small banks to roll over large commercial real estate loans based on real estate prices by scaling up lending and leverage, which fueled further increases in asset prices. When asset price growth slowed, problems at other money market mutual funds, including many that had little or no direct exposure to Lehman Brothers or the Reserve Primary Fund. Moreover, as the interbank lending market became more segmented, the system can amplify and transmit shocks. At a basic level, a unifying theme is using unique historical data to study dynamics that are obscured or hard to isolate in modern data. Jaremski received a BA in economics, classical civilizations, and business administration from Austin College in 2006 and his PhD in economics from Vanderbilt University in 2010. Before joining Utah State, he was an associate professor at Colgate University and has held visiting positions at Yale University and the Office of Financial Research at the US Treasury. He grew up in Dallas, Texas, and currently lives in Logan, Utah, with his wife. He enjoys hiking and swimming during the summer, and board games and movies during the winter.

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The intertwined nature of financial networks can propagate shocks, increase systemic risk, and magnify economic downturns. Insights from theoretical studies suggest that the tendency of interbank networks to amplify shocks reflects the relative size of network members, the extent of interconnectedness between them, and the magnitude of shocks hitting the system, whereas the systemic risk posed by individual institutions depends on heterogeneity in network structure and the concentration of counterparty exposures. Although studies suggest that network structure affects systemic risk, the lack of comprehensive interbank information has prevented much empirical work on how networks evolve and how banks handle interbank shocks. Using data on the entire US interbank network in the early 1900s, I have begun to study how the network evolved and functioned over an important period in US financial history.

My work with Wheelock finds that the network at the end of the 19th century was pyramidal in structure, with a small number of banks serving as correspondents for a high percentage of the nation’s banks. The network became less concentrated after the establishment of the Federal Reserve System in 1914, as banks shifted their interbank relationships away from New York City and toward banks in Fed cities within their local district. As seen in Figure 2, Federal Reserve Bank and branch cities generally had the largest increases in eigenvector centrality (the influence nodes have on network turnover). Fitting with my previous study on New York with Calomiris, Haelim Anderson, and Gary Richardson, Fed member banks located in Fed cities across the country were especially favored as correspondents because of their unique access to the Fed’s liquidity and payments services, which they were able to pass through to other banks.

Thus, the Fed funding changed the relative attractiveness of correspondents in different areas. In 1910–19, the Fed observed that the concentration meant that the risk of contagion emanating from a crisis hitting a core city was lessened, but the system remained vulnerable to local and regional panics, and ultimately depended on the Fed to prevent them from spreading across the banking system.

While the Fed’s establishment may have reduced the concentration of interbank relationships in certain areas, our follow-up work shows that in areas where interbank connections are known, there are still areas where interbank networks, regulation, and financial crises highlight the relationships between interconnected banks. Insights from studies of modern data also exist today, but also enable the study of important dynamics that are sometimes obscured in modern data. Recent research, for instance, has highlighted the relationships between interbank network maturation, regulation, and financial crises. The literature shows that the concentration of interbank funds in a few institutions can lead to and exacerbate instability. However, the structure of the networks is often shaped by the regulatory and economic environment surrounding the banks. Insights from studies of the Great Depression and other stress episodes where interbank connections are known, there- fore, can help in the design of better policies to contain the spillovers associated with counterparty exposures.
Economics and Behavioral Health

Johanna Catherine Maclean

Behavioral health disorders include serious mental illnesses and substance use disorders. These conditions are costly both to affected individuals and to society. Individuals with behavioral health disorders experience interpersonal problems, employment difficulties, reduced overall health, and increased risk of death. Behavioral health disorders can complicate general health treatment. These conditions are costly to society because they place demands on the criminal justice, social service, and health-care systems, and because they reduce labor market productivity. Behavioral health conditions cost the US economy more than $1 trillion each year.1,2 The causes of these disorders are complex, and likely include both genetic and environmental factors.

Behavioral health disorders are relatively common. The most recent government data suggest that in 2017, 4.2 percent of all US adults—11.2 million people—met diagnostic criteria for serious mental illness, and 7.2 percent—19.2 million people—had substance abuse disorders. Approximately 1 percent—3.1 million Americans—met criteria for both disorders.3,4 A much larger share of the population engages in misuse of substances through activities such as binge drinking and recreational use of drugs, or experiences episodes of poor mental health such as mild depression or anxiety.5,6 The United States is in the midst of an unprecedented drug-use epidemic. In 2017, 70.237 US residents are known to have died from a drug overdose. The drug-use epidemic has been largely attributable to opioids. There are 130 opioid-related overdose deaths each day, a rate that has increased more than sixfold since 1999.7 The opioid epidemic is believed to have begun in the 1990s and 2000s through overprescription of opioids for the treatment of pain. It has evolved over time to involve heroin and synthetic opioids.8 Abby Alpert, David Powell, and Rosalie Pacula, along with William Evans, Ethan Lieber, and Patrick Power, have documented that an unexpected, to consumers, externalization of OxyContin in 2010, which limited the ability to abuse this then-most commonly used prescription opioid, led many users to transition to heroin and, more recently, to fentanyl and other synthetic opioids.9 Synthetic opioids are less expensive to manufacture but are more potent than heroin and prescription opioids. Figure 1 documents trends in annual overdoses associated with any opioid, heroin, and synthetic opioids (other than methadone, which is a medication used to treat opioid use disorder). The sharp uptick in the later period is ascribed to fentanyl in particular. Federal, state, and local governments have adopted a range of policies to address the opioid epidemic: prescription drug monitoring programs, shutdowns of “pill mills,” a crackdown on doctors shopping for drugs, and exchanges, and funds to support treatment.

At the same time as the country is facing social costs from escalating drug misuse, government data suggest that suicide rates are also increasing. The overall rate and rates for men and women from 1999 through 2017 are shown in Figure 2. While behavioral health disorders generally cannot be cured, there is substantial medical evidence that these disorders can be managed. This confluence of factors creates an important potential role for public policy, which can provide insurance that is sufficiently generous, in terms of covered benefits, to allow appropriate treatment. In a series of studies, my colleagues and I explore how insurance expansions can influence behavioral health-care service use and associated outcomes. To study these questions, we combine information from health economics with clinical knowledge of behavioral health disorders. Both are important for studying these questions. We rely heavily on survey and administrative data sets maintained by the US government specifically to track behavioral health outcomes.

An important feature of the behavioral health-care delivery system, particularly with substance use disorder (SUD) system, is limited use of insurance protections. Many providers operate outside insurance payments, for example, accepting self-payments or relying on government grants and contracts to support treatment. Combining this feature with unique challenges faced by those with behavioral health disorders, such as stigma, makes the extent to which expanding insurance leads to changes in outcomes is an empirical question.

Evidence from Public Markets

Medicaid, which finances health-care services for low-income people, is the largest purchaser of US behavioral health care.10 Brendan Saloner and I examine the effect of Affordable Care Act (ACA) Medicaid expansions on SUD treatment, specialty treatment, and medical outcomes obtained in non-specialty settings such as physicians’ offices.11 Medicaid-enabled adults have elevated need for behavioral health-care treatment and are less likely to receive this modality of care than privately and Medicare-insured adults. The ACA reflects a major transformation of many areas of the health-care system. Pre-ACA, experts argued that “no illness will be more affected than substance use disorders.”12 We find that ACA-Medicaid expansion increased Medicaid coverage among patients receiving specialty care, and use of Medicaid to pay for treatment. Given the limited use of insurance within the SUD treatment delivery system, this latter finding is important; ACA-Medicaid allowed low-income adults with SUDs to enroll in Medicaid, and providers were able to accept that insurance as a form of payment. Our effect sizes are quite large, suggesting that new forms of financing are available, patients and providers are elastic in their responses. We do not observe changes in admissions. We hypothesize that capacity constraints within the SUD treatment delivery system may have stultified the effects in the short run, as we examine the situation two years post-expansion.

In continuing research, we are exploring the longer-run effects, using data from four years post-expansion, and we observe increases in utilization which is in line with our hypothesis. When we consider prescribers for medications financed by Medicaid, we find that Medicaid in office-based settings, a setting generally preferred by patients, we observe large increases in treatment uptake. In comparisons of substance mental illness, Michael Pesko, Benjamin Cook, Nicholas Carson, and I show that ACA-Medicaid expansions increase use of prescriptions used to treat mental illness in office-based settings.13 Similarly, Elson Blunt, Joana Popovic, Steven Marcus, and I use data on the universe of specialty mental-health care providers to study ACA-Medicaid effects.14 We show that following ACA-Medicaid expansion specialty providers are more likely to accept Medicaid as a form of payment, suggesting that this expansion is making new treatment options available to lower-income adults.

Sebastian Tello-Trillo, Douglas Webber, and I examine the effect of losing public insurance on hospitalizations for behavioral health care outcomes.15 We explore a large-scale and unexpected

Figure 1

Source: Mortality data from the National Vital Statistics System, National Center for Health Statistics

Figure 2

Source: Mortality data from the National Vital Statistics System, National Center for Health Statistics
Medicaid disenrollment that occurred in the state of Tennessee in 2005 (TennCare). This disenrollment led to 190,000 low-income adults losing cov-

erage that had included a generous set of behavioral health-care services. We show that losses of care diminished the number of SUD-related hospitaliza-

tions, while the number of mental ill-

ness hospitalizations was unchanged. Patients with SUDs were not able to fill in the Medicaid gap and instead had to self-

finance hospitalizations after the disen-

rollment. We hypothesize that patients with SUDs face important social, eco-

nomic, and cognitive challenges that limit their ability to find substitute coverage following an insurance loss. We also show that, post-disenrollment, behavioral health outcomes decline, plausibly through reduced treatment for SUDs and other changes, such as increased financial strain, as has been shown by Laura Argys et al.15

Evidence from Private Markets

State governments have attempted to increase coverage of behavioral health-care services in private insurance contracts. Beginning in the 1970s, states have required either that private insurers include a minimum set of SUD treatment services, and Medicaid covered these services. We find no evidence that this reform led to changes in the number of admissions to treatment or in the types of payment that providers were willing to accept. Massachusetts is unique in that this state had one of the lowest uninsured rates in the country prior to its reform, thus our null find-

ings may reflect ceiling effects.

Lessons Learned

Our findings are heterogeneous; there does not appear to be a “one size fits all” policy for addressing behavioral health issues. The effects of expanding coverage are much more nuanced and appear to depend on the affected popu-

lation, treatment setting, and outcome. The mixed findings suggest that, while there is promise in using insurance to improve behavioral health care, decision-makers must carefully assess the context in which a policy change is being considered.

The Massachusetts Experience

The Massachusetts health-care reform of 2006 is viewed by many policy experts as the blueprint for the ACA. Both reforms aimed to achieve universal insurance through expansions of public and private coverage. Saloner et al. leverage the Massachusetts experience to study how a large-scale insur-

ance expansion in both the public and private markets might influence spe-

cialty SUD treatment.18 Massachusetts compelled private insurers to provide a relatively generous set of SUD treat-

ment services, and Medicaid covered these services. We find no evidence that this reform led to changes in the number of admissions to treatment or in the types of payment that providers were willing to accept. Massachusetts is unique in that this state had one of the lowest uninsured rates in the country prior to its reform, thus our null find-

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Household Expectations:
From Neuroscience to Household Finance and Macroeconomics
Camelia M. Kuhnen

Recent work in neuroscience and neuroeconomics has provided valuable insights into the factors that drive individuals’ formulations of expectations. These insights can be used by economists to better understand individuals’ beliefs and behaviors. Moreover, aggregate-level implications can be drawn from these micro-level findings.

Neuroscientist Brian Knutson and I documented an asymmetry in the brain in the processing of gain and loss information. This discovery of asymmetric encoding of positive and negative outcomes led to a hypothesis that could be tested experimentally in the context of financial decision-making. In experiments conducted in three countries—the United States, Romania, and Germany—I have found that learning occurs differently depending on whether gain or loss has taken place. Specifically, negative outcomes induce overly pessimistic beliefs about investment payoffs. This is because, in an environment characterized by negative payoffs, people put too much weight on each additional bit of bad news. This experimental finding suggests that, at the aggregate level, recessions could last longer and be more severe than predicted by statistical models, in part because of undue pessimism among individuals.

Participants in my experiments were temporarily exposed to environments characterized by only positive or only negative payoffs; they exhibited a clear bias toward pessimism in learning the loss domain. Outside of the laboratory, however, many people have encountered negative outcomes on a regular basis, experiencing significant adversity. Do they process information about economic outcomes differently than others in the same age cohort, with the same macroeconomic history? Neuroscience suggests that to be the case. Specifically, it has been shown that experiencing adversity shapes the way the brain learns, so that an increased neural sensitivity to loss information and a decreased neural sensitivity to gain information.1 In recent research, Suyoshi Dax, Stefan Nagel, Andrei Miu, and I find in laboratory experiments as well as in large survey data that people who have encountered more adversity, measured by socioeconomic status (SES), form more pessimistic beliefs about financial investments and economic opportunities.2 Controlling for participants’ prior beliefs and the information they possess regarding investment options, Miu and I find that lower-SES individuals update less from high asset payoffs than their higher-SES counterparts, and end up with more pessimistic beliefs about the quality of these assets. As a result, lower-SES individuals are less likely to invest in these assets, particularly at times when, objectively, the assets can be expected to have high payoffs.

While lab experiments allow researchers to test hypotheses in controlled environments, there is always a question about the external validity of lab findings. To investigate whether it is generally true that those with lower incomes or lower education have overly pessimistic beliefs about financial investment opportunities, as well as about macroeconomic conditions in general, Das, Nagel, and I use data from the University of Michigan’s Surveys of Consumers (MSC). We use monthly data over 38 years with about 180,000 person-month observations. The data include MES measures (i.e., income rank in the respondent’s age bracket, as well as education), five macro-economic measures, including beliefs about future stock market returns or the national unemployment rate, as well as self-reported household choices such as equity investments or the purchase of homes, durables, or cars.

The large-scale evidence we find using the MSC is consistent with the experimental findings. Namely, we find that higher-SES individuals are more optimistic about the macroeconomic environment relative to lower-SES individuals, but that in recessions, this expectations gap narrows dramatically.3 In a recent study, Elsas Fernand, Geng Li, Itzhak Ben-David, and I find that lower-SES individuals are more uncertain in their micro- and macro-level economic expectations, and all else being equal, more uncertain individuals engage in more cautious behaviors.4 We use data from the Federal Reserve Bank of New York Survey of Consumer Expectations (SCE) covering more than 1,200 households each month, 2013 to 2017. Respondents report their expectations about three variables: their personal income growth, the national inflation rate, and the rate of growth of national home prices over the upcoming 12 months. The elicitation procedure captures information about the mean outcome that each respondent expects, as well as the uncertainty associated with that expectation. We find that individuals with lower income and education levels, facing more precarious financial conditions and avoiding investment in stocks or real estate, are more pessimistic about macroeconomic conditions and holding lower-SES individuals are part of the reason these individuals stay away from risky financial investments and as a result, accumulate low levels of wealth, whereas higher-SES individuals hold optimistic beliefs and make investments with higher expected payoffs. Over time, this may lead to an increase in wealth inequality. It remains to be seen whether some of the patterns discussed at the North Carolina conference level, as well as differentiated levels of investment because of these expectations, also affect investments in education or human capital, or the decision to engage in entrepreneurial pursuits.

Adversity does not just impact the lens through which individuals view economic opportunities in a glass half-full versus glass half-empty manner. It also impacts perceived uncertainty about the economic environment. This idea comes from work in cognitive science and neuroscience that shows that adversity, which is characterized by environmental instability, influences learning. Specifically, individuals faced with adversity perceive the overall environment as more volatile.5 In a recent study, Elyas Fernand, Geng Li, Itzhak Ben-David, and I find that lower-SES individuals hold optimistically about the macroeconomic environment, whereas higher-SES individuals are more uncertain in their expectations, as well as the uncertainty associated with that expectation. We find that individuals with lower income and education levels, facing more precarious financial conditions and avoiding investment in stocks or real estate, are more pessimistic about macroeconomic conditions and holding lower-SES individuals are part of the reason these individuals stay away from risky financial investments and as a result, accumulate low levels of wealth, whereas higher-SES individuals hold optimistic beliefs and make investments with higher expected payoffs. Over time, this may lead to an increase in wealth inequality. It remains to be seen whether some of the patterns discussed at the North Carolina conference level, as well as differentiated levels of investment because of these expectations, also affect investments in education or human capital, or the decision to engage in entrepreneurial pursuits.

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tations and behavior. The fact that lower-SES individuals and those from communities with worse economic conditions are the most uncertain suggests that a reduction of uncertainty would have a higher impact on the decisions of these individuals than on the decisions of those who are better off.

Lastly, neuroscience work has documented heterogeneity regarding the brain’s response to adversity. Specifically, self-efficacy modulates the ability to deal with negative shocks. Self-efficacy is a personal characteristic that captures the strength of an individual’s belief that his or her actions can influence one’s future, shape the financial health of populations. Such expectations are particularly beneficial for individuals coming from lower-SES backgrounds, where traditional financial products or intrahousehold insurance may not be available to cushion the effects of negative economic shocks.

We still have a lot to learn about why households differ in their expectations about economic variables that can influence their consumption or wealth down the road. The data we have so far indicate that these expectations are predictable to some degree, and that a lot of these predictions can be informed by work done in other academic disciplines, such as neuroscience and psychology. Household expectations affect many household economic decisions, and are critically important determinants of the impact of various public policies. Further investigation is needed to understand both the drivers and their consequences.

[Figure 3]

Figure 3: Self-Efficacy and Financial Delinquency

- **Self-Efficacy and Financial Delinquency**
- **Financial delinquency rate**
- **Late debt**
- **Late bills**

**Approximate quintile of Pearlin score**

- **Return to Text**

**“Cumulative Stress in Childhood Is Associated with Blunted Reward-Related Brain Activity in Adulthood,”**

**Return to Text**

**“Socioeconomic Status and Learning from Financial Information,”**

**Return to Text**

**“The Neural Basis of Financial Risk-Taking,”**

**Return to Text**

**“Cumulative Stress in Childhood Is Associated with Blunted Reward-Related Brain Activity in Adulthood,”**

**Return to Text**

**“Socioeconomic Status and Learning from Financial Information,”**

**Return to Text**

**“Socioeconomic Status and Macroeconomic Expectations,”**

**Return to Text**

**“Rational Snacking: Young Children’s Decision-making on the Marshmallow Task Is Moderated by Beliefs about Environmental Reliability,”**

**Return to Text**

**“Expectations Uncertainty and Household Economic Behavior,”**

**Return to Text**

**“Affective State and Local of Control Modulate the Neural Response to Threat,”**

**Return to Text**

**“Non-Cognitive Abilities and Financial Delinquency: The Role of Self-Efficacy in Avoiding Financial Distress,”**

**Return to Text**

Abhijit Banerjee, Esther Duflo, and Michael Kremer Awarded Nobel Prize

Abhijit Banerjee and Esther Duflo of MIT and Michael Kremer of Harvard University, all of whom are long-time NBER research associates, were awarded the 2019 Nobel Prize in Economic Sciences. The prize recognizes their contributions to development economics and the study of global poverty. In particular, it cites their championing of randomized controlled trials and field experiments as methodologies for analyzing how a wide range of policy interventions—in health, education, credit markets, and local governance, among others—can contribute to poverty alleviation.

The laureates’ work “has considerably improved our ability to fight global poverty. In just two decades, their new, experiment-based approach has transformed development economics,” the Royal Swedish Academy of Sciences said in a statement announcing the award. A key element of the researchers’ strategy is a focus on questions that concern specific contributors to poverty, such as lack of education or poor health. Their central methodological contribution is the recognition that these questions “are often best answered via carefully designed experiments among the people who are most affected.”

The full announcement of the Nobel Prize award may be found here; the Royal Swedish Academy also provided a longer explanation of the scientific contributions that underlie this work.

On December 8, 2019, the laureates delivered lectures in Stockholm on the subject of their prize-winning work. Banerjee and Duflo each lectured on “Field Experiments and the Practice of Economics,” Kremer lectured on “Experimentation, Innovation, and Economics.”

Banerjee’s lecture

Duflo’s lecture

Kremer’s lecture


In addition, six current or past members of the NBER Board of Directors have received the Nobel Prize: George Akerlof, 2001; Robert Solow, 1987; and the late William Vickrey, 1996; Douglas North, 1993; James Tobin, 1981; and Paul Samuelson, 1970.
New Research Associates and Faculty Research Fellows Named

The NBER Board of Directors appointed 41 new research associates at its September 2019 meeting. Research associates (RAs) must be tenured faculty members at North American colleges or universities; their appointments are recommended to the board by the directors of the NBER's 20 research programs, typically after consultation with a steering committee of leading scholars.

The new research associates are affiliated with 26 different colleges and universities; they received their graduate training at 24 different institutions. As of December 1, 2019, there were 1,256 research associates and 307 faculty research fellows. With the exception of one scholar who was previously a research associate, resigned while in public service, and was re-elected, all of the new research associates were previously faculty research fellows. Most were recently granted tenure at their home institutions and therefore became eligible for RA status.

Two new faculty research fellows (FRFs) were also appointed in July 2019. FRFs are appointed by the NBER president, also on the advice of program directors and steering committees and following a call for nominations in January. They must hold primary academic appointments in North America.

The names and affiliations of the newly promoted and newly appointed NBER affiliates, along with the names of the universities where they received Ph.D.s, are listed below. The entry in italics designates the RA who was reappointed.

Research Associates

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nikhil Agarwal</td>
<td>MIT (Industrial Organization)</td>
</tr>
<tr>
<td>Jennie Bai</td>
<td>Georgetown University (Asset Pricing)</td>
</tr>
<tr>
<td>Yan Bai</td>
<td>University of Rochester (International Finance and Macroeconomics)</td>
</tr>
<tr>
<td>Matilde Bombardini</td>
<td>University of British Columbia (Political Economy)</td>
</tr>
<tr>
<td>Jaroslav Borovička</td>
<td>New York University (Asset Pricing)</td>
</tr>
<tr>
<td>Laurent Bouton</td>
<td>Georgetown University (Political Economy)</td>
</tr>
<tr>
<td>Richard Burkhauser</td>
<td>Cornell University (Aging)</td>
</tr>
<tr>
<td>Leonardo Burstryn</td>
<td>University of Chicago (Political Economy)</td>
</tr>
<tr>
<td>Rafael Dix-Carneiro</td>
<td>Duke University (International Trade and Investment)</td>
</tr>
<tr>
<td>Will Dobbie</td>
<td>Harvard University (Education)</td>
</tr>
<tr>
<td>Michael Ewens</td>
<td>Caltech (Productivity, Innovation, and Entrepreneurship)</td>
</tr>
<tr>
<td>Benjamin Faber</td>
<td>UC, Berkeley (International Trade and Investment)</td>
</tr>
<tr>
<td>Thibault Fally</td>
<td>UC, Berkeley (International Trade and Investment)</td>
</tr>
<tr>
<td>Xavier Giroud</td>
<td>Columbia University (Corporate Finance)</td>
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<tr>
<td>Joshua Goodman</td>
<td>Brandeis University (Education)</td>
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<tr>
<td>Koichiro Ito</td>
<td>University of Chicago (Environment and Energy)</td>
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<tr>
<td>Amir Kermani</td>
<td>UC, Berkeley (Monetary Economics)</td>
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<tr>
<td>Judd Kessler</td>
<td>University of Pennsylvania (Public Economics)</td>
</tr>
<tr>
<td>Carl Kitchens</td>
<td>Florida State University (Development of the American Economy)</td>
</tr>
<tr>
<td>Joanna Lahey</td>
<td>Texas A&amp;M University (Aging)</td>
</tr>
<tr>
<td>Robin Lee</td>
<td>Harvard University (Industrial Organization)</td>
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<tr>
<td>Derek Lemoine</td>
<td>University of Arizona (Environment and Energy)</td>
</tr>
<tr>
<td>Shanjun Li</td>
<td>Cornell University (Environment and Energy)</td>
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<tr>
<td>Adrienne Lucas</td>
<td>University of Delaware (Children)</td>
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<tr>
<td>Rosalie Liccardo Pacula</td>
<td>University of Southern California (Health Economics)</td>
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<tr>
<td>Seth Richards-Shubik</td>
<td>Lehigh University (Health Economics)</td>
</tr>
<tr>
<td>Raffaella Sadun</td>
<td>Harvard University (Productivity, Innovation, and Entrepreneurship)</td>
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</tbody>
</table>

Faculty Research Fellows

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Casey Warman</td>
<td>Dalhousie University (Health Economics)</td>
</tr>
<tr>
<td>Johannes Wieland</td>
<td>UC, San Diego (Monetary Economics)</td>
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<tr>
<td>Jing Cynthia Wu</td>
<td>University of Notre Dame (Monetary Economics)</td>
</tr>
<tr>
<td>Crystal Yang</td>
<td>Harvard University (Law and Economics)</td>
</tr>
<tr>
<td>Mao Ye</td>
<td>University of Illinois (Asset Pricing)</td>
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<tr>
<td>Haixiang Zhu</td>
<td>MIT (Asset Pricing)</td>
</tr>
<tr>
<td>Nicolas L. Ziebarth</td>
<td>Auburn University (Development of the American Economy)</td>
</tr>
</tbody>
</table>

Christina Patterson, University of Chicago (Monetary Economics)
Conferences

Tax Policy and the Economy

An NBER conference on Tax Policy and the Economy took place in Washington, DC, September 26. Research Associate Robert A. Moffit of Johns Hopkins University organized the meeting, which was sponsored by the Harry and Lynde Bradley Foundation. These researchers’ papers were presented and discussed:

- Jonathan Meer, Texas A&M University and NBER, and Benjamin Priday, Texas A&M University, “The Impact of Income, Wealth, and Tax Policy on Charitable Giving”
- Katherine Baicker, University of Chicago and NBER; Mark Shepard, Harvard University and NBER; and Jonathan S. Skinner, Dartmouth College and NBER, “One Medicare for All? The Economics of a Uniform Health Insurance Program” (NBER Working Paper 24037)
- Casey B. Mulligan, University of Chicago and NBER, “The Employer Penalty, Voluntary Compliance, and the Size Distribution of Firms: Evidence from a Survey of Small Businesses”
- John Beshears and David Laibson, Harvard University and NBER, James J. Choi, Yale University and NBER; Mark Iwry, The Brookings Institution; David C. John, AARP Public Policy Institute; and Brigitte C. Madrian, Brigham Young University and NBER, “Building Emergency Savings Through Employer-Sponsored Rainy Day Savings Accounts”

Summaries of these papers are at www.nber.org/conferences/2019/TPE19/summary.html

Economics of Artificial Intelligence

An NBER conference on Economics of Artificial Intelligence took place in Toronto September 26–27. Research Associates Ajay K. Agrawal, Joshua S. Gans, and Ari Goldfarb, all of the University of Toronto, and Catherine Tucker of MIT organized the meeting, which was sponsored by the Alfred P. Sloan Foundation and the Creative Destruction Lab. These researchers’ papers were presented and discussed:

- Jonathan Meer, Texas A&M University and NBER, and Benjamin Priday, Texas A&M University, “The Impact of Income, Wealth, and Tax Policy on Charitable Giving”
- Katherine Baicker, University of Chicago and NBER; Mark Shepard, Harvard University and NBER; and Jonathan S. Skinner, Dartmouth College and NBER, “One Medicare for All? The Economics of a Uniform Health Insurance Program” (NBER Working Paper 24037)
- Casey B. Mulligan, University of Chicago and NBER, “The Employer Penalty, Voluntary Compliance, and the Size Distribution of Firms: Evidence from a Survey of Small Businesses”
- John Beshears and David Laibson, Harvard University and NBER, James J. Choi, Yale University and NBER; Mark Iwry, The Brookings Institution; David C. John, AARP Public Policy Institute; and Brigitte C. Madrian, Brigham Young University and NBER, “Building Emergency Savings Through Employer-Sponsored Rainy Day Savings Accounts”

Summaries of these papers are at www.nber.org/conferences/2019/AIf19/summary.html


- Mathieu Aubry, Ecole des Ponts Paritech; Roman Krauss, University of Luxembourg; Gustavo Manso, University of California, Berkeley; and Christophe Spenglers, HEC Paris, “Machines and Masterpieces: Predicting Prices in the Art Auction Market”
- Ajay K. Agrawal, John McHale, National University of Ireland; and Alexander Oettl, Georgia Institute of Technology and NBER, “A Model of AI-Aided Scientific Discovery and Innovation”
- Daniel Rock, MIT, “Engineering Value: The Returns to Technological Talent and Investments in Artificial Intelligence”
- Daniel Björkcregen, Brown University, and Joshua Blumenstock, University of California, Berkeley, “Manipulation-Proof Machine Learning”
- Mariano-Florentino Cuellar, California Supreme Court and Stanford University; Benjamin Larsen, Copenhagen Business School; and Yong Suk Lee and Michael Webb, Stanford University, “Impact of Artificial Intelligence Regulation on Artificial Intelligence Adoption and Innovation”
- Ansgar Walther and Tarun Ramadorai, Imperial College London; Paul Goldsmith-Pinkham, Yale University; and Andreas Fuster, Swiss National Bank, “Predictably Unequal? The Effect of Machine Learning on Credit Markets”
- Seth G. Benzell, Boston University; Laurence J. Kotlikoff, Boston University and NBER; Guillermo LaGarda, Inter-American Development Bank; and Jeffrey D. Sachs, Columbia University and NBER, “Robots Are Us: Some Economics of Human Replacement”
- Matthew Jackson, Stanford University, and Zafer Kanik, MIT, “How Automation that Substitutes for Labor Affects Production Networks, Growth, and Income Inequality”
- Marcus Dillender, University of Illinois at Chicago, and Eliza Forsythe, University of Illinois, Urbana-Champaign, “Computerization of White Collar Jobs”
- Gillian Hadfield, University of Toronto, and Jack A. Clark, Import AI, “Regulatory Markets for AI Safety”
- Bo Cowgill and Fabrizio DellAcqua, Columbia University, “Biased Programmers? Or Biased Data? A Field Experiment about Algorithmic Bias”
- Prasanna Tambe and Lorin Hitt, University of Pennsylvania; Erik Brynjolfsson, MIT and NBER; and Daniel Rock, MIT, “AI and Intangible Capital”
- Susan Athey, Stanford University and NBER, “The Value of Data for Personalization in Retail”
- Benjamin R. Handel and Jonathan T. Kolstad, University of California, Berkeley and NBER; and Jonathan Gruber, MIT and NBER, “Managing Intelligence: Skilled Experts and AI in Markets for Complex Products”

Summaries of these papers are at www.nber.org/conferences/2019/AIf19/summary.html
Taxation of Business Income

An NBER conference on Taxation of Business Income took place in Cambridge on October 2–3. Research Associates Joshua Rauh of Stanford University and Owen M. Zidar of Princeton University organized the meeting, which was sponsored by the Smith Richardson Foundation. These researchers’ papers were presented and discussed:

- Sebastian Bustos, Harvard University; Dina Pomeranz, University of Zurich; Juan Carlos Suárez Serrato, Duke University and NBER; José Vila-Belda, University of Zurich, and Gabriel Zucman, University of California, Berkeley and NBER, “Monitoring Tax Compliance by Multinationals: Evidence from a Natural Experiment in Chile”
- Sabrina T. Howell, New York University and NBER, and Filippo Mezzanotti, Northwestern University, “Financing Entrepreneurship through the Tax Code: Angel Investor Tax Credits”
- Scott R. Baker, Northwestern University and NBER; Stephen Tang Sun, Peking University; and Constantine Yannelis, University of Chicago and NBER, “Corporate Taxes and Retail Prices”
- Audrey Guo, Santa Clara University, “The Effects of Unemployment Insurance Taxation on Multi-Establishment Firms”
- Chatib Basri, University of Indonesia; Mayara Felix, MIT; Rema Hanna, Harvard University and NBER; and Benjamin A. Olken, MIT and NBER, “Tax Administration vs. Tax Rates: Evidence from Corporate Taxation in Indonesia” (NBER Working Paper 26150)
- Cailin R. Slattery, Columbia University, “Bidding for Firms: Subsidy Competition in the US”
- Max Risch, University of Michigan, “Does Taxing Business Owners Affect Their Employees? Evidence from a Change in the Top Marginal Tax Rate”
- Christine L. Dobridge, Federal Reserve Board; and Paul Landefeld and Jake Mortenson, Joint Committee on Taxation, “Corporate Taxes and the Wage Distribution: Effects of the Domestic Production Activities Deduction”
- Enrico Moretti, University of California, Berkeley and NBER, and Daniel Wilson, Federal Reserve Bank of San Francisco, “Taxing Billionaires: Estate Taxes and the Geographical Location of the Forbes 400”
- Lucas Goodman, Katherine Lim, and Andrew Whitten, US Department of the Treasury, and Bruce Sacerdote, Dartmouth College and NBER, “Impacts of the 199A Deduction for Pass-through Owners”
- Cailin R. Slattery and Owen M. Zidar, “Evaluating State and Local Business Tax Incentives”

Summaries of these papers are at www.nber.org/conferences/2019/TBIf19/summary.html

Cities, Labor Markets, and the Global Economy Conference

An NBER conference on Cities, Labor Markets, and the Global Economy took place in Cambridge on October 25–26. Research Associates Edward L. Glaeser of Harvard University and Stephen J. Redding of Princeton University organized the meeting, which was sponsored by the Smith Richardson Foundation. These researchers’ papers were presented and discussed:

- Eran Hoffmann, Hebrew University, and Monika Piazzesi and Martin Schneider, Stanford University and NBER, “Jobs at Risk, Regional Growth, and Labor Market Flows”
- Jan Eckhout, University College London; Christoph Hedrich, Universitat Pompeu Fabra; and Roberto Pinheiro, Federal Reserve Bank of Cleveland, “Technology, Spatial Sorting, and Job Polarization”
- Sharat Ganapati, Georgetown University; Woan Foong Wong, University of Oregon; and Oren Ziv, Michigan State University, “Entrepot”
- Cecile Gaubert, Patrick M. Kline, and Danny Yagan, University of California, Berkeley and NBER, “Place-Based Redistribution”
- Fabian Eckert, Princeton University, “Growing Apart: Tradable Services and the Fragmentation of the US Economy”
- Nicholas Bloom, Stanford University and NBER; Kyle Handley, University of Michigan and NBER; André Kurmann, Drexel University; and Philip A. Luck, University of Colorado Denver, “The Impact of Chinese Trade on US Employment: The Good, The Bad, and The Debatable”
- Gabriel Kreindler, Harvard University, and Yuhei Miyachi, Boston University, “Measuring Commuting and Economic Activity inside Cities with Cell Phone Records”
- Costas Arkolakis, Yale University and NBER; Rodrigo Adão, University of Chicago and NBER; and Federico Esposto, Tufts University, “General Equilibrium Indirect Effects in Space: Theory and Measurement”
- Victor Couture, University of California, Berkeley; Cecile Gaubert, University of California, Berkeley and NBER; Jessie Handbury, University of Pennsylvania and NBER; and Erik Hurst, University of Chicago and NBER, “Income Growth and the Distributional Effects of Urban Spatial Sorting” (NBER Working Paper 26442)

Summaries of these papers are at www.nber.org/conferences/2019/CLMf19/summary.html
Health, Wellbeing, and Children’s Outcomes for Native Americans and Other Indigenous Peoples

An NBER conference on Health, Wellbeing, and Children’s Outcomes for Native Americans and Other Indigenous Peoples took place November 1 in Cambridge. Research Associate Randall Alke of the University of California, Los Angeles and Faculty Research Fellow Emilia Simeonova of Johns Hopkins University organized the meeting, which was sponsored by the National Institute on Aging through the NBER Center for Aging and Health Research. These researchers’ papers were presented and discussed:

- Richard H. Steckel, Ohio State University and NBER, and Kris Inwood, University of Guelph, “Changes in the Well-Being of Native Americans Born in the Northwest, 1830–1900”
- Stefanie Schurer, University of Sydney; Mary Alice Doyle, Poverty Action; and Sven Silburn, Menzies School of Health Research, “Why did Australia’s Major Welfare Reform Lead to Worse Birth Outcomes in Aboriginal Communities?”
- Donna Feir, Federal Reserve Bank of Minneapolis, and Maggie Jones and David Smeones, University of Victoria, “The Legacy of Indian Missions in the United States”
- Maggie Jones, “Student Aid and the Distribution of Educational Attainment”
- Brooks A. Kaiser, University of Southern Denmark, “Growth, Transition, and Decline in Resource Based Socio-Ecological Systems”
- Dustin Frye, Vassar College, and Christian Dippel, University of California, Los Angeles and NBER, “The Effect of Land Allotment on Native American Households during the Assimilation Era”

Summaries of these papers are at www.nber.org/conferences/2019/IPf19/summary.html

Macroeconomic Perspectives on the Value of Health

An NBER conference on Macroeconomic Perspectives on the Value of Health took place November 8 in Cambridge. Research Associate Chad Syverson of the University of Chicago organized the meeting, which was sponsored by the Smith Richardson Foundation. These researchers’ papers were presented and discussed:

- David M. Cutler, Harvard University and NBER, “A Satellite Account for Health in the United States”
- Adriana Lleras-Muney, University of California, Los Angeles and NBER, and Flavien E. Moreau, University of California, Los Angeles, “A Unified Law of Mortality for Economic Analysis”
- Seidu Dauda, World Bank Group; Abe Dunn, Bureau of Economic Analysis; and Anne E. Hall, Department of the Treasury, “Are Medical Prices Still Declining? A Systematic Examination of Quality-Adjusted Price Index Alternatives for Medical Care”
- Mary O’Mahony and Lea Samek, King’s College London, “Health and Human Capital”

Summaries of these papers are at www.nber.org/conferences/2019/IPf19/summary.html

Labor Demand and Older Workers

An NBER conference on Labor Demand and Older Workers took place November 15 in Cambridge. Research Associate Kevin S. Milligan of the University of British Columbia organized the meeting, which was sponsored by the Alfred P. Sloan Foundation. These researchers’ papers were presented and discussed:

- Johanna Catherine Maclean, Temple University and NBER; Stefan Pichler, ETH Zurich; and Nicolas R. Ziebarth, Cornell University, “Mandated Sick Pay: Coverage, Utilization, and Welfare Effects”
- Joseph Marchand, University of Alberta, and Kevin S. Milligan, “Natural Resource Booms and Older Workers”
- Marco Angrisani and Erik Meijer, University of Southern California, and Ari Kaptyn, University of Southern California and NBER, “Sorting into Jobs and Labor Supply and Demand at Older Ages”
- Daron Acemoglu, MIT and NBER, and Pascal Restrepo, Boston University, “Demographics and Automation” (NBER Working Paper 24421)

Summaries of these papers are at www.nber.org/conferences/2019/LDOIf19/summary.html

Economics of Infrastructure Investment

An NBER conference on Economics of Infrastructure Investment took place November 15–16 in Cambridge. Research Associates Edward L. Glaeser of Harvard University and James M. Poterba of MIT organized the meeting, which was sponsored by the Smith Richardson Foundation. These researchers’ papers were presented and discussed:

- Leah Brooks, George Washington University, and Zachary Liscow, Yale University, “Is Infrastructure Spending Like Other Spending?”
- Matthew Turner, Brown University and NBER, and Geetika Nagpal, Brown University, “Transportation Infrastructure in the US”
- Jennifer Bennett, Robert Kornfeld, and David Wasshausen, Bureau of Economic Analysis, and Daniel E. Sichel, Wellesley College and NBER, “Measuring Infrastructure in BEA’s National Economic Accounts”
The NBER’s Innovation Information Initiative convened December 6–7 in Cambridge. Research Associates Adam B. Jaffe of Brandeis University, Bronwyn H. Hall of University of California, Berkeley, and Bhaven N. Sampat of Columbia University were joined by Osmat Azzam Jefferson of Queensland University of Technology, Samuel J. Klein of MIT, and Matt Marx of Boston University in organizing the meeting, which was sponsored by the Alfred P. Sloan Foundation. The following researchers made presentations about existing or prospective data-creation projects and opportunities:

- Dejan Makovec, International Transport Forum at the OECD, and Adrian Bridge, Queensland University of Technology, “Procurement Practices and Infrastructure Costs”
- Eduardo Engel and Ronald Fischer, Universidad de Chile, and Alexander Galetovic, Adolfo Ibáñez University, “International Experience with Public-Private Partnerships in Infrastructure”
- Deborah J. Lucas, MIT and NBER, and Jorge Alberto Jimenez Montesinos, MIT, “A Fair Value Approach to Valuing Public Infrastructure Projects and the Risk Transfer in Public Private Partnerships”

Summaries of these papers are at [www.nber.org/conferences/2019/E139/summary.html](http://www.nber.org/conferences/2019/E139/summary.html)

### Innovation Information Initiative

The NBER's Innovation Information Initiative convened December 6–7 in Cambridge. Research Associates Adam B. Jaffe of Brandeis University, Bronwyn H. Hall of University of California, Berkeley, and Bhaven N. Sampat of Columbia University were joined by Osmat Azzam Jefferson of Queensland University of Technology, Samuel J. Klein of MIT, and Matt Marx of Boston University in organizing the meeting, which was sponsored by the Alfred P. Sloan Foundation. The following researchers made presentations about existing or prospective data-creation projects and opportunities:

- Jeffrey M. Kuhn, University of North Carolina, “Applications of Textual Similarity to Measure Construction and Evaluation”
- Ashish Arora and Sharon Belenzon, Duke University and NBER, and Lia Sheer, Duke University, “The Role of Company Names and Ownership Changes in the Dynamic Reassignments of Patents”
- Osmat Azzam Jefferson, Queensland University of Technology, “Lenslab and the Lens public API”
- Matt Marx, Boston University, “Toward a Complete Set of Patent References to Science”
- Lisa D. Cook, Michigan State University and NBER, “Race, Ethnicity, and Patenting: USPTO’s New Data Collection Effort”
- Samuel J. Klein, “Prior Art”
- Mitsuru Igami, Yale University, “Mapping Firms’ Locations in Technological Space”
- Dominique Guellec, Observatoire des Sciences et Techniques, “Novelty and Impact”
- Martina Iori, Sant’Anna School of Advanced Studies, “The Complexity of Knowledge”

## India in the Global Economy

The NBER, along with the Indian Council for Research on International Economic Relations (ICRIER) and the National Council for Applied Economic Research (NCAER), two research organizations based in New Delhi, India, sponsored a meeting in New Delhi and Gurgaon, India, December 13–15. The meeting, which focused on “India in the Global Economy,” was the 21st gathering in this series of research exchanges. The meeting included NBER researchers as well as economists from Indian universities, research institutions, and government departments. NBER Research Associate Abhijit Banerjee of MIT organized the conference jointly with Rajat Kathuria of ICRIER. The meeting included remarks on current policy developments from Nirmala Sitharaman, the Honorable Union Minister of Finance and Corporate Affairs for India.

The NBER participants were: Neeraj Kaushal, Columbia University; Edward Glaeser and Rema Hanna, Harvard University; Anne Krueger and John Lipsky, Johns Hopkins University; Parag Pathak and James Poterba, MIT; Stephen Redding, Princeton University; Alan Auerbach, University of California, Berkeley; Kathleen McGarry, University of California, Los Angeles; Karthik Muralidharan, University of California, San Diego; Marianne Bertrand and Raghuram Rajan, University of Chicago; Charles Engel, University of Wisconsin; and Michael Peters, Yale University. Each delivered a research presentation and participated in discussion with Indian counterparts in related fields. Topics discussed included the economics of fiscal policy and tax design; urbanization; global economic growth and trade; the effects of aging populations on health status and economic performance; education, skills, and human capital acquisition; the challenge of job creation; and inequality and economic mobility.

## Program and Working Group Meetings

### Chinese Economy

Members of the NBER’s Chinese Economy Working Group met September 26–27 in Cambridge. Research Associates Nancy Qian of Northwestern University, Shang-Jin Wei of Columbia University, and Daniel Xu of Duke University organized the meeting. These researchers’ papers were presented and discussed:

- Jing Cai, University of Maryland and NBER, and Adam Szell, Central European University, “Direct and Indirect Effects of Financial Access on SME’s”
- Li Feng and Haofei Wang, Shanghai Jiao Tong University; Jun Qian and Lei Zhu, Fudan University, “Stock Pledged Loans, Capital Markets, and Firm Performance: the Good, the Bad and the Ugly”
- Alain de Janvry and Elisabeth Sadoulet, University of California, Berkeley; Guojun He, Hong Kong University of Science and Technology; Shaoda Wang, University of Chicago; and Qiong Zhang, Renmin University of China, “Influence Activities and Bureaucratic Performance: Evidence from a Large-Scale Field Experiment in China”
- Daniel Berkowitz, University of Pittsburgh; Yi Lu, National University of Singapore; and Mingqin Wu, South China Normal University, “What Makes Local Governments More Accountable? Evidence from a Website Reform”
- Hanning Fang, University of Pennsylvania and NBER; Linke Hou, Shandong University; Mingsxing Liu and Pengfei Zhang, Peking University; and Lixin Colin Xu, The World Bank, “Factions, Local Accountability, and Long-Term Development: Theory and Evidence”
Political Economy

Members of the NBER’s Political Economy Program met October 11 in Cambridge. Research Associates Ernesto Dal Bó of the University of California, Berkeley and Francesco Trebbi of the University of British Columbia organized the meeting. These researchers’ papers were presented and discussed:

- Meera Mahadevan, University of California, Santa Barbara, “The Price of Power: Costs of Political Corruption in Indian Electricity”
- Avinash Dixit, Princeton University, “We Haven’t got but one more day” — The Cuban Missile Crisis as a Dynamic Chicken Game”
- Abhay Aneja, Stanford University, and Carlos Avenancio, Indiana University, “The Effect of Political Power on Labor Market Inequality: Evidence from the 1965 Voting Rights Act”
- Katherine Casey, Stanford University and NBER; and Abou Bakarr Kamara and Niccolò Meriggi, International Growth Centre, “An Experiment in Candidate Selection” (NBER Working Paper 26160)

Summaries of these papers are at [www.nber.org/conferences/nber.org/conferences/2019/POLf19/summary.html](http://www.nber.org/conferences/nber.org/conferences/2019/POLf19/summary.html)

Market Design

Members of the NBER’s Market Design Working Group met October 18–19 in Cambridge. Research Associates Michael Ostrovsky of Stanford University and Parag A. Pathak of MIT organized the meeting. These researchers’ papers were presented and discussed:

- Liran Einav, Stanford University and NBER, Amy Finkelstein, MIT and NBER; Yunan Ji, Harvard University; and Neale Mahoney, University of Chicago and NBER, “Voluntary Regulation: Evidence from Medicare Bundled Payments”
- Amanda Y. Agan, Rutgers University and NBER; Bo Cowgill, Columbia University; and Laura K. Gee, Tufts University, “Salary Disclosure and Hiring: Field Experimental Evidence from a Two-Sided Audit Study”
- Nicole Immorlica and Brendan Lucier, Microsoft Research; Jacob D. Leshno, University of Chicago; and Irene Y. Lo, Stanford University, “Information Acquisition Costs in Matching Markets”
- Christina Aperjis, Power Auctions LLC; Lawrence Ausubel, University of Maryland; and Oleg V. Baranov, University of Colorado Boulder, “Supply Reduction in the Broadcast Incentive Auction”
- Yannai A. Gonczarowski, Microsoft Research; Lior Kovalio and Noam Nisan, Hebrew University of Jerusalem; and Assaf Romm, Hebrew University of Jerusalem and Stanford University, “Matching for the Israeli ‘Mechinot’ Gap-Year Programs: Handling Rich Diversity Requirements”
- Tayfun Sönmez and M. Bumin Yenmez, Boston College, “Affirmative Action in India via Vertical and Horizontal Reservations”
- Mohammad Akharpour, Stanford University, Julien Combe, University College London; Yinghua He, Rice University, Victor Hiler, Université Paris II; Robert Shimer, University of Chicago and NBER; and Olivier Tercioux, Paris School of Economics, “Unpaired Kidney Exchange: Overcoming Double Coincidence of Wants without Money”
- Gianluca Brezo and Sven Seuken, University of Zurich, and Benjamin Lubin, Boston University, “Machine Learning-Powered Iterative Combinatorial Auctions”
- Nick Arnosti, Columbia University, and Peng Shi, University of Southern California, “Design of Lotteries and Waitlists for Affordable Housing Allocation”

Summaries of these papers are at [www.nber.org/conferences/nber.org/conferences/2019/MDf19/summary.html](http://www.nber.org/conferences/nber.org/conferences/2019/MDf19/summary.html)
Public Economics

Members of the NBER's Public Economics Program met October 24-25 in Chicago. Program Director Amy Finkelstein of MIT and Research Associate Neale Mahoney of the University of Chicago organized the meeting. These researchers' papers were presented and discussed:

- Hunt Allcott, New York University and NBER; Joshua J. Kim, Stanford University; Dmitry Taubinsky, University of California, Berkeley and NBER; and Jonathan Zinman, Dartmouth College and NBER, "Payday Lending, Self Control, and Consumer Protection"
- Patrick Bayer, Duke University and NBER; Peter Q. Blair, Harvard University and NBER; and Kenneth Whaley, Clemson University, "Is Spending on Schools Efficient? A National Study of the Capitalization of School Spending and Local Taxes"
- Michael Gelman, Clazemont McKenna College; Shachar Kariv, University of California, Berkeley; Matthew D. Shapiro, University of Michigan and NBER; and Dan Silverman, Arizona State University and NBER, "Rational Illiquidity and the Marginal Propensity to Consume: Theory and Evidence from Income Tax Withholding and Refunds"
- Daniel C. Waldinger, New York University, "Targeting In-Kind Transfers Through Market Design: A Revealed Preference Analysis of Public Housing Allocation"
- Cailin R. Slattery, Columbia University, "Bidding for Firms: Subsidy Competition in the US"
- Juliana Londono-Velez, University of California, Los Angeles and NBER, "Can Wealth Taxation Work in Developing Countries? Quasi-Experimental Evidence from Colombia"
- Juan Carlos Sáuárez Serrato and Daniel Xu, Duke University and NBER; Xian Jiang, Duke University; Zhao Chen, Fudan University; and Zhikuo Liu, Shanghai University of Finance and Economics, "Tax Policy and Lumpy Investment Behavior: Evidence from China’s VAT Reform"

Summaries of these papers are at www.nber.org/conferences/2019/PEf19/summary.html

Economic Fluctuations and Growth

Members of the NBER's Economic Fluctuations and Growth Program met October 25 at the Federal Reserve Bank of Chicago. Research Associates Francisco J. Buera of the Washington University in St. Louis and Ayşegül Şahin of the University of Texas at Austin organized the meeting. These researchers' papers were presented and discussed:

- Monika Piazzesi and Martin Schneider, Stanford University and NBER; Ciaran Rogers, Stanford University; "Money and Banking in a New Keynesian Model"
- Chang-Tai Hsich, University of Chicago and NBER, and Esteban Rossi-Hansberg, Princeton University and NBER, "The Industrial Revolution in Services" (NBER Working Paper 25968)

International Finance and Macroeconomics

Members of the NBER's International Finance and Macroeconomics Program met October 25 in Cambridge. Research Associates Guido Lorenzoni of Northwestern University and Vivian Yue of Emory University organized the meeting. These researchers' papers were presented and discussed:

- Chenzi Xu, Harvard University, "Reshaping Global Trade: The Immediate and Long-Run Effects of Bank Failures"
- Jordi Galí, CREI and NBER, "Uncovered Interest Parity, Forward Guidance and the Exchange Rate"
- Gabriel Chodorow-Reich, Harvard University and NBER; Loukas Karabarbounis, University of Minnesota and NBER; and Rohan Kekre, University of Chicago, "The Macroeconomics of the Greek Depression" (NBER Working Paper 25900)
- Javier Bianchi, Federal Reserve Bank of Minneapolis and NBER, and César Sosa-Padilla, University of Notre Dame, "Reserve Accumulation, Macroeconomic Stabilization and Sovereign Risk"
- Luis Felipe Céspedes, Universidad Adolfo Ibáñez, and Roberto Chang, Rutgers University and NBER, "Optimal Foreign Reserves and Central Bank Policy under Financial Stress"
- Jeremy Fouliaard, London Business School; Michael Howell, CrossBorder Capital; and Hélène Rey, London Business School and NBER, "Answering the Queen: Machine Learning and Financial Crises"
- Wexin Du, University of Chicago and NBER; Benjamin M. Hébert, Stanford University and NBER; and Amy Wang Huber, Stanford University, "Are Intermediary Constraints Priced?"

Summaries of these papers are at www.nber.org/conferences/2019/IFMiF19/summary.html
Behavioral Finance

Members of the NBER’s Behavioral Finance Working Group met November 1 in Cambridge. Research Associate Nicholas C. Barberis of Yale University organized the meeting. These researchers’ papers were presented and discussed:

- Peter D. Mastro, Harvard University, “A Macro-Finance Model with Sentiment”
- Francesco D’Acunto, Boston College; Ulrike Malmendier, University of California, Berkeley and NBER; Juan Ospina, University of Chicago; and Michael Weber, University of Chicago and NBER, “Exposure to Daily Price Changes and Inflation Expectations” (NBER Working Paper 26237)
- Samuel M. Hartzmark and Samuel D. Hirshman, University of Chicago, and Alex Imas, Carnegie Mellon University, “Ownership, Learning and Beliefs”
- Nicholas C. Barberis; Lawrence J. Jin, California Institute of Technology; and Baolian Wang, University of Florida, “Prospect Theory and Stock Market Anomalies”
- Lars A. Lochstoer, University of California, Los Angeles, and Tyler Muir, University of California, Los Angeles and NBER, “Volatility Expectations and Returns”
- Paul Goldsmith-Pinkham, Yale University, and Kelly Shue, Yale University and NBER, “The Gender Gap in Housing Returns”

Summaries of these papers are at www.nber.org/conferences/2019/BFf19/summary.html

Monetary Economics

Members of the NBER’s Monetary Economics Program met November 1 in San Francisco. Faculty Research Fellows Adrien Auder of Stanford University and Marco Di Maggio of Harvard University and Program Directors Emi Nakamura and Jon Steinsson of the University of California, Berkeley organized the meeting. These researchers’ papers were presented and discussed:

- Andrés Blanco, University of Michigan, and Isaac Baley, Unistat Pompeu Fabra, “ Aggregate Dynamics in Lumpiness Economics”
- Saki Rigio, University of California, Los Angeles and NBER, and Yuliy Sannikov, Stanford University, “A Model of Intermediation, Money, Interest, and Prices”
- Anthony A. DeFusco and John A. Mondragon, Northwestern University, “No Job, No Money, No Refi: Frictions to Refinancing in a Recession”
- Greg Buchak, Stanford University; Gregor Matvos, Northwestern University and NBER; Tomasz Piskorski, Columbia University and NBER; and Amit Seru, Stanford University and NBER, “The Limits of Shadow Banking” (NBER Working Paper 25149)
- Ian Dew-Becker, Northwestern University and NBER; Alireeze Tahbaz-Salehi, Northwestern University; and Andrea Vedolin, Boston University and NBER, “Macro Skewness and Conditional Second Moments: Evidence and Theories”
- Rohan Kekre, University of Chicago, and Moritz Lenel, Princeton University, “Monetary Policy, Redistribution, and Risk Premia”

Summaries of these papers are at www.nber.org/conferences/2019/MEf19/summary.html

Organizational Economics

Members of the NBER’s Organizational Economics Working Group met November 8–9 in Cambridge. Program Directors Robert S. Gibbons of MIT and Alexandre Mas of Princeton University organized the meeting. These researchers’ papers were presented and discussed:

- Emily Breza, Harvard University and NBER; Supreet Kaur, University of California, Berkeley and NBER, and Yogita Shandasani, University of Pittsburgh, “Labor Rationing: A Revealed Preference Approach from Firing Shocks”
- Gizem Kosar, Federal Reserve Bank of New York; Aysegul Sahin, University of Texas at Austin and NBER; and Basit Zafar, Arizona State University and NBER, “The Work-Location Tradeoff: Identifying the Heterogeneity”
- Paul Mohnen, University of Michigan, “The Impact of the Retirement Slowdown on the US Youth Labor Market”
- Peter Q. Blair, Harvard University and NBER, and Benjamin Posmanick, Clemson University, “When Does Labor Market Flexibility Reduce Gender Wage Gaps?”
- Ellora Derenoncourt, Princeton University, and Claire Montialoux, University of California, Berkeley, “Minimum Wages and Racial Inequality”
- Stefano Dell’Aquila and Ulrike Malmendier, University of California, Berkeley and NBER; John A. List, University of Chicago and NBER; and Gautam Rao, Harvard University and NBER, “Estimating Social Preferences and Gift Exchange with a Piece-Rate Design”
- Brent R. Hickman, Washington University in St. Louis, and Jack Mountjoy, University of Chicago, “The Returns to College(s): Estimating Value-Added and Match Effects in Higher Education”
- Silvia Vannutelli, University of Arizona and NBER, “The Work-Leisure Tradeoff: Identifying the Heterogeneity”
- Markus Neuhold, University of Michigan, “The Impact of the Retirement Slowdown on the US Youth Labor Market”
- Peter Q. Blair, Harvard University and NBER, and Benjamin Posmanick, Clemson University, “When Does Labor Market Flexibility Reduce Gender Wage Gaps?”
- Ellora Derenoncourt, Princeton University, and Claire Montialoux, University of California, Berkeley, “Minimum Wages and Racial Inequality”
- Stefano Dell’Aquila and Ulrike Malmendier, University of California, Berkeley and NBER; John A. List, University of Chicago and NBER; and Gautam Rao, Harvard University and NBER, “Estimating Social Preferences and Gift Exchange with a Piece-Rate Design”
- Brent R. Hickman, Washington University in St. Louis, and Jack Mountjoy, University of Chicago, “The Returns to College(s): Estimating Value-Added and Match Effects in Higher Education”

Summaries of these papers are at www.nber.org/conferences/2019/LSf19/summary.html

Labor Studies

Members of the NBER’s Labor Studies Program met November 7–8 in Chicago. Program Directors David Autor of MIT and Alexandre Mas of Princeton University organized the meeting. These researchers’ papers were presented and discussed:

- Emily Breza, Harvard University and NBER; Supreet Kaur, University of California, Berkeley and NBER, and Yogita Shandasani, University of Pittsburgh, “Labor Rationing: A Revealed Preference Approach from Firing Shocks”
- Gizem Kosar, Federal Reserve Bank of New York; Aysegul Sahin, University of Texas at Austin and NBER; and Basit Zafar, Arizona State University and NBER, “The Work-Location Tradeoff: Identifying the Heterogeneity”
- Paul Mohnen, University of Michigan, “The Impact of the Retirement Slowdown on the US Youth Labor Market”
- Peter Q. Blair, Harvard University and NBER, and Benjamin Posmanick, Clemson University, “When Does Labor Market Flexibility Reduce Gender Wage Gaps?”
- Ellora Derenoncourt, Princeton University, and Claire Montialoux, University of California, Berkeley, “Minimum Wages and Racial Inequality”
- Stefano Dell’Aquila and Ulrike Malmendier, University of California, Berkeley and NBER; John A. List, University of Chicago and NBER; and Gautam Rao, Harvard University and NBER, “Estimating Social Preferences and Gift Exchange with a Piece-Rate Design”
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- Silvia Vannutelli, University of Arizona and NBER, “The Work-Leisure Tradeoff: Identifying the Heterogeneity”
- Markus Neuhold, University of Michigan, “The Impact of the Retirement Slowdown on the US Youth Labor Market”
- Peter Q. Blair, Harvard University and NBER, and Benjamin Posmanick, Clemson University, “When Does Labor Market Flexibility Reduce Gender Wage Gaps?”
- Ellora Derenoncourt, Princeton University, and Claire Montialoux, University of California, Berkeley, “Minimum Wages and Racial Inequality”
- Stefano Dell’Aquila and Ulrike Malmendier, University of California, Berkeley and NBER; John A. List, University of Chicago and NBER; and Gautam Rao, Harvard University and NBER, “Estimating Social Preferences and Gift Exchange with a Piece-Rate Design”
- Brent R. Hickman, Washington University in St. Louis, and Jack Mountjoy, University of Chicago, “The Returns to College(s): Estimating Value-Added and Match Effects in Higher Education”

Summaries of these papers are at www.nber.org/conferences/2019/LSf19/summary.html
Corporate Finance

Members of the NBER's Corporate Finance Program met November 8 at Stanford University. Research Associates John Graham of Duke University and Paola Sapienza of Northwestern University organized the meeting. These researchers’ papers were presented and discussed:

- Matthew Smith, Department of the Treasury; Owen M. Zidar, Princeton University and NBER; and Eric Zwick, University of Chicago and NBER, “Top Wealth in America: New Estimates and Implications for Taxing the Rich”
- Simon Jager, MIT and NBER; Benjamin Schoefer, University of California, Berkeley; and Jörg Heinig, Institut für Arbeitsmarkt und Berufsforschung, “Labor in the Boardroom”
- Jean-Noel Barrot, MIT; Thorsten Martin, HEC Paris; Julien Sauvagnat, Bocconi University; and Boris Vallée, Harvard University, “Employment Effects of Alleviating Financing Frictions: Worker-level Evidence from a Loan Guarantee Program”
- Ankil Kalda, Indiana University; Marco Di Maggio, Harvard University and NBER; and Vincent Yao, Georgia State University, “Second Chance: Life without Student Debt” (NBER Working Paper 25810)
- Holger Mueller, New York University and NBER, and Constantine Vannellis, University of Chicago and NBER, “Reducing Barriers to Enrollment in Federal Student Loan Repayment Plans: Evidence from the Navient Field Experiment”
- Winston Wei Dou and Lucian A. Taylor, University of Pennsylvania; Wei Wang, Queens University; and Wenyu Wang, Indiana University, “Dissecting Bankruptcy Frictions”
- Francesco D’Acunto, Boston College; Ulrike Malmendier, University of California, Berkeley and NBER; and Michael Weber, University of Chicago and NBER, “Gender Roles Distort Women’s Economic Outlook”

Summaries of these papers are at www.nber.org/conferences/2019/CFF19/summary.html

Asset Pricing

Members of the NBER's Asset Pricing Program met November 14 at Stanford University. Research Associates Stefano Giglio of Yale University and Tarek Alexander Hassan of Boston University organized the meeting. These researchers’ papers were presented and discussed:

- Matthew Smith, Department of Treasury; Owen M. Zidar, Princeton University and NBER; and Eric Zwick, University of Chicago and NBER, “Top Wealth in the United States: New Estimates and Implications for Taxing the Rich”
- Juan Morelli and Diego Perez, New York University, and Pablo Ottonello, University of Michigan and NBER, “Global Banks and Systemic Debt Crises”
- Wexin Du, University of Chicago and NBER, Benjamin M. Hebert, Stanford University and NBER; and Amy Wang Huber, Stanford University, “Are Intermediary Constraints Priced?” (NBER Working Paper 26099)

Summaries of these papers are at www.nber.org/conferences/2019/APF19/summary.html

Education

Members of the NBER's Education Program met November 14–15 in Cambridge. Program Director Caroline M. Hoxby of Stanford University organized the meeting. These researchers’ papers were presented and discussed:

- C. Kirabo Jackson, Northwestern University and NBER, and Diether Beuermann, Inter-American Development Bank, “Do Parents Know Best? The Short and Long Run Effects of Attending the Schools That Parents Prefer” (NBER Working Paper 24920)
- Richard Murphy, University of Texas at Austin and NBER, Simon Burgess, University of Bristol; and Ellen Greaves, Institute for Fiscal Studies, “Deregulating Teacher Labor Markets”
- Cher Li, Colorado State University, and Basit Zafar, Arizona State University and NBER, “Ask and You Shall Receive? Gender Differences in Regrades in College”
- Peter Bergman, Columbia University, Eric W. Chan, Babson College; and Adam Kapor, Princeton University and NBER, “Housing Search Frictions: Evidence from Detailed Search Data and a Field Experiment”
- Kevin Mumford, Purdue University, “Student Selection into an Income Share Agreement”
- Christopher Neilsen and Franco A. Callo, Princeton University, and Sebastian Gallegos, Inter-American Development Bank, “Screening and Recruiting Talent at Teacher Colleges Using Pre-College Academic Achievement”

Summaries of these papers are at www.nber.org/conferences/2019/EOF19/summary.html
Development Economics/BREAD

A joint meeting of the NBER's Development Economics Program and BREAD (Bureau for Research and Economic Analysis of Development) was held November 22–23 in Cambridge. Oriana Bandiera and Robin Burgess of the London School of Economics, Research Associates Melissa Dell of Harvard University, Edward Miguel of the University of California, Berkeley and Dean Yang of the University of Michigan, and Program Directors Seema Jayachandran of Northwestern University and Benjamin A. Olken of Pennsylvania, “Do College Applicants Respond to Changes in Sticker Prices Even When They Don’t Matter?”


Barbara Biasi, Yale University and NBER, “Higher Salaries or Higher Pensions? Inferring Preferences from Teachers’ Retirement Behavior”

Summaries of these papers are at www.nber.org/conferences/2019/EDf19/summary.html

Health Care

Members of the NBER’s Health Care Program met December 6 in Cambridge. Program Director Jonathan Gruber of MIT and Research Associates Leemore Dafny of Harvard University, Benjamin R. Handel of the University of California, Berkeley, and Neale Mahoney of the University of Chicago organized the meeting. These researchers’ papers were presented and discussed:

Shooshan Danagoulian, Wayne State University; Daniel S. Grossman, West Virginia University; and David Slusky, University of Kansas, “Office Visits Preventing Emergency Room Visits: Evidence from the Flint Water Switch”

Liran Einav, Stanford University and NBER, Amy Finkelstein, MIT and NBER, Yunan Ji, Harvard University; and Neale Mahoney, “Voluntary Regulation: Evidence from Medicare Payment Reform”

Pierre-Thomas Léger and Wu Jiashan, University of Illinois at Chicago, and Robert Town, University of Texas, Austin and NBER, “A Theory of Geographic Variations in Medical Care”

Richard Domurat, University of California, Los Angeles; Isaac Menashe, Covered California; and Wesley Yin, University of California, Los Angeles and NBER, “The Role of Behavioral Frictions in Health Insurance Marketplace Enrollment and Risk: Evidence from a Field Experiment” (NBER Working Paper 26153)


Abby E. Alpert, University of Pennsylvania and NBER, William N. Evans and Ethan Lieber, University of Notre Dame and NBER; and David Powell, RAND Corporation, “Origins of the Opioid Crisis and Its Enduring Impacts”

Benjamin R. Handel and Jonathan T. Kolstad, University of California, Berkeley and NBER; and Thomas Minten and Johannes Spinnewijn, London School of Economics, “The Social Determinants of Choice Quality: Evidence from Health Insurance in the Netherlands”

Yiqun Chen, Stanford University, and Petra Persson and Maria Polyakova, Stanford University and NBER, “The Roots of Health Inequality and the Value of Intra-Family Expertise” (NBER Working Paper 25618)

Summaries of these papers are at www.nber.org/conferences/2019/HCf19/summary.html
Entrepreneurship

Members of the NBER’s Entrepreneurship Working Group met December 6 in Cambridge. Program Director Josh Lerner of Harvard University and Research Associate David T. Robinson of Duke University organized the meeting. These researchers’ papers were presented and discussed:

- **Kristoph Kleiner and Isaac Hacamo**, Indiana University, "Confidence Spillovers in Competitive Environments: Evidence from Entrepreneurship"
- **Johan Hombert**, HEC Paris, and **Adrien Matray**, Princeton University, "Technology Boom, Labor Reallocation, and Human Capital Depreciation"
- **Barbara Biasi**, Yale University and NBER, and **Song Ma**, Yale University, "The Education-Innovation Gap"
- **Olav Sorenson** and **Rodrigo Canales**, Yale University; **Michael Dahl**, Aarhus University; and **M. Diane Burton**, Cornell University, "Do Startup Employees Earn More in the Long Run?"
- **Juanita González-Uribe**, London School of Economics, and **Santiago Reyes**, Inter-American Development Bank, "Identifying and Boosting ‘Gazelles’: Evidence from Business Accelerators"

Summaries of these papers are at [www.nber.org/conferences/2019/ENTIF19/summary.html](http://www.nber.org/conferences/2019/ENTIF19/summary.html)

International Trade and Investment

Members of the NBER’s International Trade and Investment Program met December 6–7 at Stanford University. Program Director Stephen J. Redding of Princeton University organized the meeting. These researchers’ papers were presented and discussed:

- **Dominick G. Bartelme** and **Ting Lan**, University of Michigan, and **Andrei A. Levchenko**, University of Michigan and NBER, "Specialization, Market Access and Real Income"
- **Joseph S. Shapiro**, University of California, Berkeley and NBER, "The Environmental Bias of Trade Policy"
- **Andrés Rodríguez-Clare**, University of California, Berkeley and NBER; **Mauricio Ulate**, Federal Reserve Bank of San Francisco; and **José P. Vásquez**, University of California, Berkeley, "New-Keynesian Trade: Understanding the Employment and Welfare Effects of Sector-Level Shocks"
- **Nezih Guner**, CEMFI; **Alessandro Ruggieri**, Universitat Autònoma de Barcelona and Barcelona GSE; and **James R. Tybout**, Pennsylvania State University and NBER, "Trade, Offshoring, and the Job Ladder"
- **Costas Arkolakis** and **Michael Peters**, Yale University and NBER, and **Sun K. Lee**, Columbia University, "European Immigrants and the United States’ Rise to the Technological Frontier in the 19th Century"

- **Bradley Setzler**, University of Chicago, and **Felix Tintelnot**, University of Chicago and NBER, "The Effects of Foreign Multinationals on Workers and Firms in the United States" (NBER Working Paper 26149)
- **Alejandro G. Graziano**, University of Maryland; **Kyle Handley**, University of Michigan and NBER; and **Nuno Limão**, University of Maryland and NBER, "Brexit Uncertainty and Trade Disintegration" (NBER Working Paper 25334)
- **Vanessa I. Alviarez**, University of British Columbia; **Javier Cravino**, University of Michigan and NBER; and **Natalia Ramondo**, University of California, San Diego and NBER, "Accounting for Cross-Country Income Differences: New Evidence from Multinational Firms"
- **Wulong Gu**, Statistics Canada; **Alla Lileeva**, York University; and **Daniel Trefler**, University of Toronto and NBER, "Global Sourcing from Low-Wage Countries: Implications for R&D and Employment"

Summaries of these papers are at [www.nber.org/conferences/2019/ITIF19/summary.html](http://www.nber.org/conferences/2019/ITIF19/summary.html)
NBER Books

Productivity in Higher Education

Caroline M. Hoxby and Kevin Stange, editors

How do the benefits of higher education compare with its costs, and how does this comparison vary across individuals and institutions? These questions are fundamental to quantifying the productivity of the education sector. Productivity in Higher Education uses rich and novel administrative data, modern econometric methods, and deep institutional understanding to explore productivity issues in the education sector. The authors examine the returns to undergraduate education, differences in costs by major; the productivity of for-profit schools, the productivity of various types of faculty, the effects of online education on the higher education market, and the ways in which the productivity of different institutions responds to market forces. The analyses recognize five key challenges to assessing productivity in higher education: the potential for multiple student outcomes in terms of skills, earnings, invention, and employment; the fact that students select which school to attend based in part on their aptitude; the difficulty of attributing outcomes to individual institutions when students attend more than one; and the possibility that some of the benefits of higher education may arise from the system as a whole rather than from a single institution. The findings and the approaches illustrated can facilitate decision-making processes in higher education.

Social Security Programs and Retirement around the World: Working Longer

Courtney C. Coile, Kevin Milligan, and David A. Wise, editors

Developed countries during the last two decades have experienced a long-term decline in men’s labor force participation at older ages, followed by a more recent pattern of sharply rising participation rates. Participation rates for women at older ages also have been rising. What explains the trend reversal for men, the evolving pattern for women, and the differences in these trends across countries? The answers to these questions are pivotal as countries seek solutions to the fiscal and retirement security challenges posed by longer lifespans. This eighth volume of the International Social Security project, which compares the social security and retirement experiences of 12 developed countries, documents trends in participation and employment, and explores reasons for the rising participation rates of older workers. The chapters use a common template for analysis which facilitates comparison of results across countries. Using within-country natural experiments and cross-country comparisons, the researchers study the impact of improving health and education, changes in the occupation mix, the retirement incentives of social security programs, and the emergence of women in the workplace. The findings suggest that social security reforms and other factors such as the movement of women into the labor force have played an important role in labor force participation trends.

Innovation Policy and the Economy, volume 20

Josh Lerner and Scott Stern, editors

The chapters in this 20th volume of Innovation Policy and the Economy present research on the interactions among public policy, the innovation process, and the economy. One explores changes in the ability of the US to attract talented foreign workers and the role of sponsoring institutions in shaping immigration policy. Another explains how the division of innovative labor between research universities and corporate labs affected productivity growth and the transformation of knowledge into new products and processes. A third reviews a variety of innovation policies and their performance in the pharmaceutical sector. Next is a chapter on the effects of competition policy on innovation, “creative destruction,” and economic growth. A fifth chapter focuses on how experimental policy design can be a cost-effective way to attain program goals. The last chapter examines geographic disparities in innovation, joblessness, and technological dynamism, and studies how reallocation of grants and geographically targeted entrepreneurship policy could affect labor supply and welfare.