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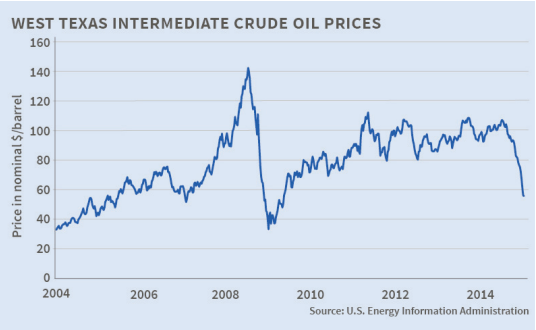

Program Report

Law and Economics

Christine Jolls*

The NBER's Law and Economics Program studies the effects and causes of legal rules in the foundational legal subjects — property law, criminal law, contract law, and tort law — and in additional legal subjects such as the protection of consumers, workplace regulation, and corporate law and governance. The program also studies legal processes within courts, legislatures, and agencies.

Program members meet twice annually, once at a mid-year program meeting and again at the NBER Summer Institute. Recent Summer Institute workshops have included joint sessions with the NBER's Economics of Crime Working Group on several occasions.

This article first describes recent research in the foundational legal subjects and then examines work on the operation of the legal process and on the effects and causes of legal rules in the areas of consumer protection, workplace regulation, and corporate law and governance.

Property Law, Criminal Law, Contract Law, and Tort Law

Prominent early work in law and economics involved theoretical modeling of tort law issues; much recent work has engaged in empirical testing of such models. A recent study by Daniel Carvell, Janet Currie, and W. Bentley MacLeod, for instance, offers both theoretical and empirical exploration of the effects of limiting joint and several liability in tort.[1] The authors' empirical findings suggest that limiting liability increases precautionary behavior by defendants who would be likely to escape liability in the absence of the limits.

Criminal law has also been an active area of empirical research in recent years. Giovanni Mastrobuoni, for example, studies the effect on policing of software-based predictions of future offender behavior.[2]

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Exploiting variation in otherwise comparable Italian police forces' use of such future-crime predictive models, his evidence suggests that predictive policing significantly increases robbery clearance rates.

Research by Jennifer Doleac examines a different crime-fighting tool — DNA databases.[3] Doleac's empirical findings support the conclusion that these databases, which have now been adopted in every state, produce significant increases in the probability of catching offenders. Accordingly, crime rates, particularly in categories in which forensic evidence is likely to be collected at the scene, such as murder, rape, assault, and vehicle theft, decline with the adoption of DNA databases.

Noteworthy in criminal law enforcement has been New York City's "stop and frisk" policy, which is the subject of recent work by Decio Coviello and Nicola Persico.[4] Examining the racial dimensions of the program, the authors find that whites are slightly less likely than African-Americans to be arrested following a stop. This finding, the authors suggest, provides some evidence that unsupported or unwarranted stops are not predominantly visited upon African-Americans.

Turning to contract law, a central area of law and economics inquiry is contractual ambiguity or incompleteness. The optimal legal response to such ambiguity or incompleteness may naturally depend on its cause, and much recent work seeks to explore potential causes. Patrick Bolton and Antoine Faure-Grimaud, for instance, develop a model that grounds contractual incompleteness in the time costs of deliberation among parties.[5] The authors proceed to explore a range of implications of their characterization. In other recent work, Oliver Hart and John Moore, as well as Hart and Maija Halonen-Akatwijuka, link contractual incompleteness to the potential costs of reference points that these authors associate with contractual specificity.[6] The addition of a contractual term governing a specific issue may have costly effects on reference points for other issues.

Within property law, the legal classifications within which real property (land) is transacted are shown to be strikingly consequential in work by Gary Libecap and Dean

Lueck.[7] Exploiting the adjacency of two dominant land-demarcation systems — in Ohio's Virginia Military District, a decentralized system based on the unique features of land, and in adjoining areas of Ohio, a system dividing land into uniform rectangles — Libecap and Lueck find evidence of significant net benefits from the latter system.

The Operation of the Legal Process

A fundamental structural feature of the legal process is the burden of proof in both court-based adjudication and government agency decision-making. Recent research by Louis Kaplow provides a model of the understudied policy instrument of the optimal burden of proof.[8] Kaplow's analysis identifies how the optimum trades off deterrence and the chilling of desirable behavior. Extensions suggest the importance of numerous factors in determining optimality of the burden of proof.

As is well understood, many lawsuits are resolved via settlement prior to court adjudication. High-low agreements, the subject of recent work by J.J. Prescott, Kathryn Spier, and Albert Yoon, present a fascinating hybrid of court adjudication and out-of-court settlements, as litigants agree on upper and lower amounts that bound the recovery the plaintiff may obtain at trial.[9] Such agreements are a form of partial settlement that Prescott, Spier, and Yoon's model shows can limit the risk of outlier awards that might otherwise occur when litigants are divergently optimistic about their trial prospects.

A recent paper by Andrew Daughety and Jennifer Reinganum also addresses agreements outside of court.[10] In these authors' model of lawsuit joinder and settlement, the equilibrium shows a "bandwagon" effect in which lawsuits by early-filing plaintiffs generate additional filings by others. Settlement may exacerbate this effect.

Turning to behavior within the courtroom, recent work by Moses Shayo and Asaf Zussman examines preferential judicial treatment of a judge's in-group in Israeli small claims court.[11] Exploiting random assignment of small claims cases to Arab or Jewish judges, Shayo and Zussman's evidence suggests that judges prefer members of their own group; in addition, favoritism increases with recent terrorism intensity in the vicinity of the court.

Recent work by Shamena Anwar, Patrick Bayer, and Randi Hjalmarsson explores the role of juror age in felony trials in the United States.[12] The authors utilize random variation in the age composition of the pool of eligible citizens called for jury duty to identify substantial effects of juror age on the likelihood of ultimate felony conviction.

Consumer Protection, Workplace Regulation, and Corporate Law and Governance

An extremely active area of law and economics research in the years since the financial crisis has been consumer financial protection. Recent work by Sumit Agarwal, Souphala Chomsisengphet, Neale Mahoney, and Johannes Stroebel, for instance, utilizes a differences-in-differences approach in analyzing a panel data set covering over 160 million credit card accounts before and after the 2009 Credit Card Accountability Responsibility and Disclosure (CARD) Act.[13] The authors find that the CARD Act's limits on credit card fees significantly reduced overall borrowing costs to consumers. Fee limits did not appear to be offset by an increase in interest charges or a reduction in the volume of credit.

Credit card, mobile phone, and other fees are the subject of a recent contracting model by Paul Heidhues and Botond Koszegi.[14] In a setting in which there are two types of consumers, naïve and sophisticated, and the naïve consumers ignore fees, firms with information about consumers' degree of naivete will tend to increase the distortionary exploitation of consumers believed to be naïve. The authors study the conditions under which a legal limitation on seller information about the degree of consumer naivete may increase consumer welfare.

Consumer protection law requires calibration to minimize concerns of moral hazard, a problem addressed in recent work by Christopher Mayer, Edward Morrison, Tomasz Piskorski, and Arpit Gupta.[15] The authors compare rates of mortgage delinquency before and after a legal settlement requiring that mortgage modifications be offered to seriously delinquent borrowers. A differences-in-differences analysis of mortgages that were covered by the settlement compared to those not covered suggests that borrowers with covered mortgages are significantly more likely to become delinquent after the settlement — when delinquency opens the door to mortgage modification — than before.

Recent law and economics work has also examined consumer markets from the perspective of racial and ethnic discrimination. Ian Ayres, Mahzarin Banaji, and I utilize a field experiment on an online auction site with photographs showing a baseball card for sale held in either an African-American or a white hand.[16] The online auction environment means that features of the transaction other than the color of the hand are, by construction, identical across transactions. Transactions with an African-American hand turned out to yield significantly lower seller revenue than transactions with a white hand.

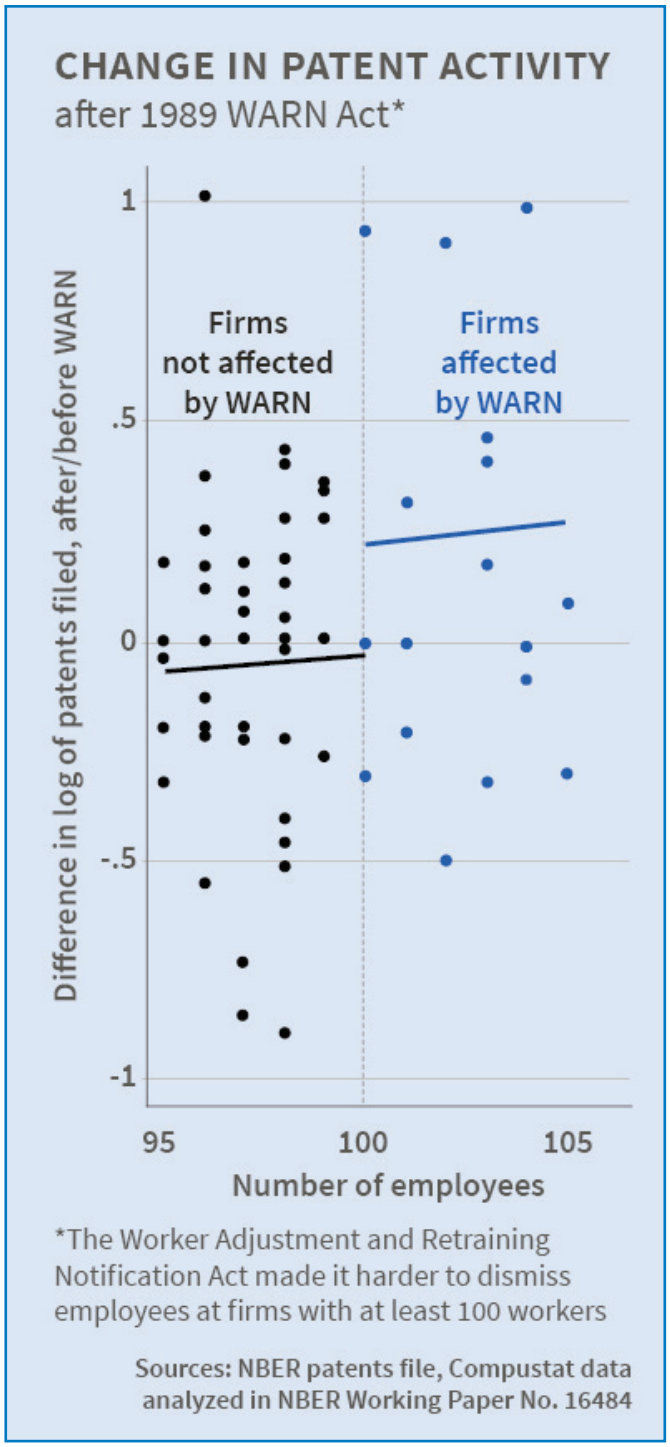
Similar findings of differential treatment on the basis of a group trait appear in recent work by Raymond Fisman, Daniel Paravisini, and Vikrant Vig.[17] The authors find that Indian bank officers, who are exogenously assigned to loan applicants, give preferential treatment to ethnically similar

applicants. Officer-borrower cultural proximity also increases repayment performance, suggesting that the differential treatment of applicants, and the differential performance of borrowers, may be due to information that bank officers have about borrowers who are similar to them.

Consumers facing severe financial hardship may wish to declare bankruptcy, but the legal and administrative fees associated with the bankruptcy process may delay or prevent such filing. Recent work by Tal Gross, Matthew Notowidigdo, and Jialan Wang utilizes the randomized timing of tax rebate checks to assess the potential effect of liquidity constraints on bankruptcy filing.[18] Consistent with the liquidity constraint hypothesis, rebate receipt causes a significant short-run increase in the number of bankruptcy filings.

Analysis of workplace and labor market regulation — particularly in the form of legal limits on discharge — has long been an important focus of law and economics research. A recent addition to this body of work is a study by Viral Acharya, Ramin Baghai, and Krishnamurthy Subramanian on discharge laws and employees' innovative activity.[19] The authors exploit country-level changes in discharge laws, together with industry-level variation in the importance of innovative activity, to explore the relationship between employees' innovative efforts and discharge prohibitions that commit employers not to punish short-run failures. The authors' empirical findings provide some suggestion that tighter restrictions on discharge may help to foster innovation.

Discharge laws' benefit in constraining potential employer opportunism is also at the center of a recent study of causes of discharge limits. Alberto Alesina, Yann Algan, Pierre Cahuc, and Paola Giuliano examine the role of employees' geographic mobility in reducing their vulnerability to hold-up and observe that the value of discharge laws is highest when employees are less geographically mobile.[20] Thus, discharge laws will tend to be most valuable in cultures with strong family ties that make moving away from home costly. The authors' empirical findings suggest a positive relationship between labor market structures at the beginning of the 21st century and family values prevailing prior to World War II.



Corporate law and governance is another longstanding focus of law and economics research. The 2008 Law and Economics Program Report described the activities of the program's Corporate Law and Investor Protection Working Group, directed by research associate Lucian Bebchuk. The working group's activities culminated in the publication of a series of articles on corporate law and governance in a special issue of the *Review of Financial Studies*.

Since that time, research in corporate law and governance has continued to feature regularly in program meetings and at the Summer Institute. Most recently, Kelly Shue and Richard Townsend offered empirical analysis of the evolution of top corporate executives' incentive contracts over recent decades.[21] Shue and Townsend's analysis focuses on the importance of option rigidities that caused compensation to rise dramatically with high equity returns; they also address recent regulatory changes requiring disclosure of the value of option grants.

At a program meeting in 2009, Lucian Bebchuk co-organized a special session devoted to corporate law

and governance. There, Kose John and Dalida Kadyrzhanova presented research on the relationship between firms' risky investments in innovation and the degree of divergence between shareholders' interests and those of relatively undiversified top executives.[22] Firm-specific risk appears to be an understudied but important source of agency costs within firms.

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How Oil-Price Shocks Affect Producers and Consumers

Ryan Kellogg

Ryan Kellogg is a Research Associate in the NBER Programs on Energy and Environmental Economics and Industrial Organization. An associate professor of economics at the University of Michigan, he received a B.A. in economics and a B.S. in chemical engineering at Rice University in 1999, and completed his Ph.D. in agricultural and resource economics at the University of California, Berkeley in 2008. He worked for BP from 1999–2003.

Kellogg's research bridges industrial organization, energy economics, and environmental policy. Many of his projects examine the behavior of U.S. oil and gas producers, addressing questions such as how production companies interact with drilling companies to improve productivity, how drilling decisions react to price volatility in crude oil markets, and why oil production is unresponsive to oil price shocks in the short run. He also has studied the effectiveness of U.S. reformulated gasoline programs, household vehicle demand and future fuel price expectations, the economics of interstate oil and gas transmission, and potential impacts of climate change.

He lives in Ann Arbor, Michigan, with his fiancée, Kim, and their collie, Sophie.

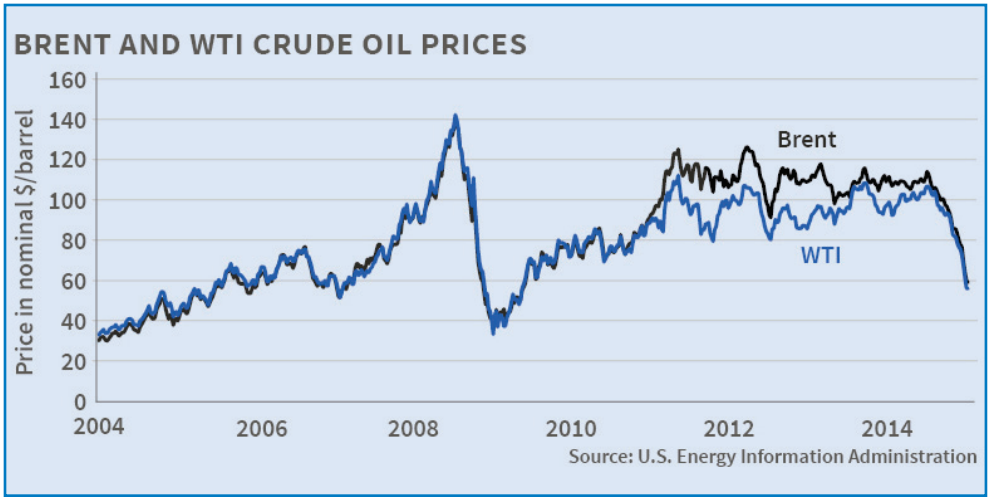
Markets for crude oil have been characterized by multiple episodes of volatility over the past 20 years. The price of Brent crude oil, an international "light" crude oil benchmark priced in the North Sea, varied from a low of about $10 per barrel (bbl) in 1999 to a peak of more than $140/bbl in 2008, before falling again during the Great Recession. While the Brent price stabilized around $110/bbl during 2010–13, it recently and suddenly collapsed to around $50/bbl. The majority of these oil price swings have been attributed to global demand shocks such as the Great Recession, though the price drop this past autumn has not yet been extensively studied.[1]

The accompanying figure shows the price both of Brent light and West Texas Intermediate (WTI) crude oil, which is priced in Cushing, Oklahoma. Historically, the WTI and Brent crude oil prices tracked each other extremely closely. However, beginning in 2011 these two price series diverged substantially, with WTI sometimes falling more than $20/bbl below Brent. This gap has recently closed substantially, but not entirely.

In a series of papers, my co-authors and I have studied how shocks to crude oil markets affect oil producers and consumers. We have addressed questions such as "How do oil drilling and production respond to oil price shocks?", "Is oil price volatility itself important?", and "How do consumers forecast future price changes?" This research summary briefly describes these papers and notes issues where future research is needed.

The Cushing Oil Glut

In a recent project, Severin Borenstein and I studied the divergence between WTI and Brent oil prices that began in 2011.[2] This divergence arose from the confluence of a dramatic increase in unconventional crude oil production in Alberta, North Dakota, and West Texas and a lack of sufficient pipeline capacity to transport this new crude oil to Gulf Coast refineries. These factors led to a "glut" of oil



at Cushing, Oklahoma, depressing the WTI price relative to the price of international crude oil. Our paper focuses on whether this decrease in the WTI price passed through to regional gasoline and diesel prices.

Using data from the Energy Information Administration (EIA) on wholesale refined product markets, we find that gasoline and diesel prices in the Midwest, including Oklahoma, did not decrease at all in response to the glut of crude oil at Cushing. This lack of response is explained by the fact that, even though crude oil pipeline capacity was constrained after 2011, refined-product pipeline capacity was not. Thus, the marginal barrels of gasoline and diesel in the Midwest were, and still are, imported from the Gulf Coast, where they are refined using high-cost internationally-procured crude oil. These results imply that increases in crude oil production in the central U.S. did not lead to benefits for local consumers in the form of lower gasoline prices. Instead, Midwest refiners profited from the large spread between Midwest prices for crude oil and refined products.

Since the publication of our paper, a series of significant pipeline investments has substantially decreased the spread between WTI and Brent oil prices. As our paper predicted, the relative increase in the WTI price has not passed through to Midwest refined product prices. Still, the WTI-Brent price wedge has not completely closed, owing to the U.S. ban on crude oil exports and to the fact that shale oil from North Dakota and West Texas is "light" relative to imported "heavy" crude. Because most U.S. Gulf Coast refineries are designed to handle heavy crude oil, they only purchase light crude oil at a discount, creating a differential relative to the international price. This situation presents a clear need for research into the economics of lifting the U.S. crude oil export ban, including a detailed analysis of how changes in light vs. heavy crude oil use by refineries would affect U.S. and global prices for refined products.

Consumers' Future Gasoline Price Expectations

How do U.S. consumers respond to gasoline price shocks? A complete answer to this question requires information on what consumers believe about how future gasoline prices are affected by shocks to today's price. For example, if consumers believe that a gasoline price shock is only temporary, then their preferences for fuel-efficient versus fuel-inefficient vehicles should not be significantly affected by the shock, since vehicles typically last many years. Soren T. Anderson, James M. Sallee, and I provide the first evidence on consumers' gasoline-price forecasts by examining two decades of data from the Michigan Survey of Consumers.[3] We show that, on average, consumers expect that the real price of gasoline five years in the future will be equal to the current real price. That is, consumers on average have a "no-change" forecast for gasoline prices, and moreover believe that shocks to gasoline prices today will be persistent into the future.

Our result accords well with studies of optimal crude oil price forecasts, which show that it is very difficult to identify a forecast that reliably "beats" a no-change forecast in terms of predictive power, especially for multi-year time horizons.[4] It therefore appears that consumers on average have reasonable beliefs about future prices, though we also find considerable cross-consumer heterogeneity. An important implication of this finding is that consumers should, to the extent that they care about future vehicle operating costs, substantially adjust their valuation of fuel economy in response to gasoline price shocks.

Realistic Modeling of Oil Drilling and Production

How have U.S. oil producers responded to the large swings in oil prices observed over the past 20 years? Looking ahead, should we expect new shale oil producers to reduce their production rates following this year's drop in crude oil prices? Addressing these questions requires a model of oil supply. The workhorse model dates back to 1931, when Harold Hotelling's classic paper studied a framework in which exhaustible resource owners can freely allocate the production of the resource across time.[5]

In a recent paper, Anderson, Stephen Salant, and I observe that Hotelling's framework does not apply to oil extraction.[6] Instead, the maximum production rate from any well is physically constrained by the pressure available in the underground oil reservoir, and this pressure declines toward zero as more and more oil is extracted. Using detailed data on well-level production and drilling from Texas, we show that oil production from existing wells exhibits essentially zero response to price shocks, contradicting a basic prediction of Hotelling's standard model. Instead, production declines steadily toward zero, consistent with a model in which firms always produce their wells at their maximum flow rate. In contrast, we show that the rate of drilling of new wells responds substantially to oil price shocks, as does the cost of renting drilling rigs.

Thus, oil price shocks do not affect oil supply immediately, but rather over the medium run as changes in drilling gradually affect the stock of producing wells and ultimately the total rate of production. More broadly, our results indicate that oil supply modeling should focus not on firms' production decisions — since production from drilled wells is essentially price-inelastic — but on firms' drilling investment decisions. With regard to the recent drop in oil prices, our results suggest that we should look to the market for drilling rigs, not to changes in production, for signs that the recent growth in U.S. oil supply is being curtailed.

Oil Price Volatility and Option Value

It has not been just the level of oil prices that has changed substantially over time: oil price volatility has varied substantially as well. For instance, oil prices

were quite stable during 1992–97, then experienced substantial swings in both directions in subsequent years. How might changes in expected price volatility affect firms' drilling behavior? In a paper titled "The Effect of Uncertainty on Investment: Evidence from Texas Oil Drilling," I study this question using drilling data from Texas and data from options markets on expected oil price volatility.[7] The logic behind the use of options markets is that the price of an option to buy oil at some future date implicitly incorporates information on the expected volatility of the oil price: The greater the volatility, the higher the price of the option. The options price data therefore provide me with a time series of data on the expected future volatility of the price of oil.

I find that, controlling for the oil price level, periods of expected high price volatility are associated with low levels of investment in new wells. This result accords with predictions from real options theory.[8] From the perspective of a firm, an undrilled well is an option in the sense that it can be drilled either today or at some future date or never. The value of drilling in the future increases with uncertainty about the future price of oil. Why? If the oil price increases substantially, the future value of drilling will also substantially increase, but if the oil price decreases, the loss in the well's value is limited by the fact that it cannot fall below zero (since the firm won't drill a well that is expected to lose money). Thus, increases in expected price volatility increase the upside gain more than they decrease the downside loss, yielding an increase in the value of waiting.

In my paper, I construct a real option model of firms' drilling decisions and then estimate this model using the Texas drilling data. I find that the magnitude with which the rate of drilling in Texas responds empirically to volatility shocks closely matches the predictions from the model. In other words, the investment behavior of oil producers in Texas corresponds remarkably well to that of dynamically optimizing firms in a textbook real options model. An implication of this result is that, when trying to predict the impact of an oil price shock on drilling activity, it is important to consider not just the magnitude of the shock but also whether firms expect additional shocks in the near future. In particular, if firms believe that the recent gyrations in oil prices are likely to continue, forecasts of changes in oil supply that use only changes in price levels may underestimate the extent to which drilling activity will fall.

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Demographics, Job Polarization, and Macroeconomic Analysis of Labor Markets

Nir Jaimovich and Henry E. Siu

In the past 50 years, labor markets in the United States and other industrialized countries have experienced marked change due to technological progress and demographic shifts. In this piece, we summarize some of our joint work, much of which is in collaboration with our coauthors, on the implications of these long-run trends for macroeconomic and labor market phenomena.

This summary is organized into two themes. The first emphasizes important age differences in labor market outcomes, and how changes in an economy's age composition impact the level of aggregate unemployment and the severity of business cycle fluctuations. We then turn attention to the phenomenon of job polarization, specifically the disappearance of employment opportunities in occupations focused on "routine" tasks. Our work investigates the implications of this process for labor market dynamics for varied demographic groups, as well as for the changing nature of business cycle recoveries.

Demographics

Since World War II, industrialized countries have experienced dramatic demographic changes. We have investigated the consequence of this for business cycle analysis.[1] We find that changes in the age composition of the labor force account for a significant fraction of the variation in business cycle volatility observed in the G7 economies.

To do this, we first show that, over the business cycle, the young experience much greater volatility of employment and hours-worked than the prime-aged, while those closer to retirement age experience volatility somewhere in-between. For instance, in the United States, the volatility of hours-worked for 15 to 29-year-olds over the business cycle is nearly 2.5 times greater than that of 40 to 49-year-olds; as a result, though individuals under the age of 30 account for about one-quarter of aggregate hours, they account for close to half of aggregate hours volatility. Given this, a natural conjecture is that the responsiveness of the macro-economy to

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Jaimovich's research focuses on business cycles and the dynamics of labor markets. He received his B.A. from the Hebrew University and an M.A. and Ph.D. in economics from Northwestern University.

Jaimovich lives in Chapel Hill, North Carolina, with his wife and two kids. He enjoys the outdoors, following Argentinean soccer, reading non-economics books, and looking for a perfect hummus and falafel in the United States. He hasn't found them.

Henry Siu is a Faculty Research Fellow in the NBER's Economic Fluctuations and Growth Program, and an associate professor in the Vancouver School of Economics at the University of British Columbia. His research interests are at the intersection of macro- and labor economics.

Siu received his B.A. in economics from the University of British Columbia and his Ph.D. in economics from Northwestern University. He was the inaugural recipient of the Bank of Canada Governor's Award in macroeconomic research, and has done visiting stints and consulting for the Federal Reserve Banks of Chicago, Minneapolis, and St. Louis, the Bank of Canada, and the Reserve Bank of Australia.

Siu grew up in Pile of Bones, Saskatchewan, and currently lives in Vancouver with his wife, two children, and dog. He enjoys hockey, Tim Hortons, Mounties, and maple syrup.

business cycle shocks depends on the age composition of the workforce.

Next, we exploit variation in the nature and timing of demographic change that has been observed across countries. For instance, the dramatic baby boom of the 1950s and 1960s was followed by a baby bust in the United States. By contrast, Japan experienced a sharp decline in fertility after WWII that has continued to the present day, save for a mild rebound in the 1970s. This variation across G7 countries allows us to determine the causal role of age composition on macroeconomic volatility.

The nature of our results is illustrated in the graph below, where we display the share of the labor force of "volatile age" (i.e., the young and old), along with a measure of business cycle volatility. Cyclical volatility tracks the volatile-aged share very closely. We establish this more formally in the paper using panel data techniques for all G7 economies. We find that the aging of the baby boomers accounts for approximately one-quarter of the "Great Moderation," namely the reduction in business cycle volatility observed in the U.S. since the mid-1980s.

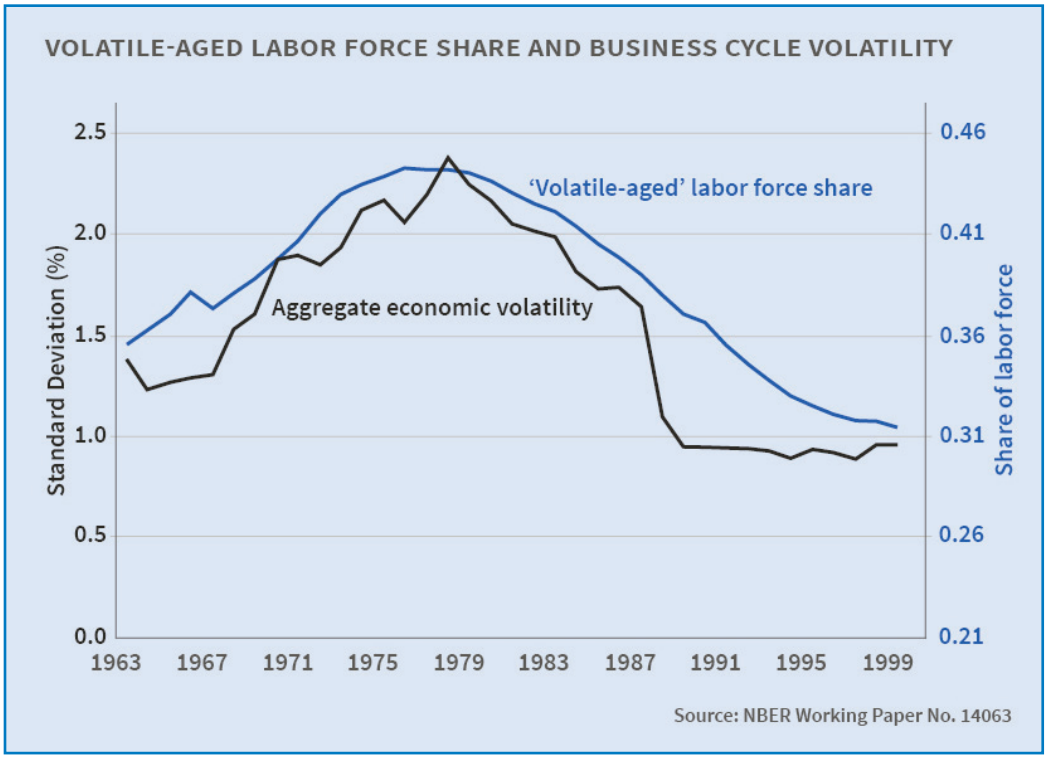
These results indicate the need for a theoretical understanding of why differences in labor market volatility exist across age groups. In a joint paper with Seth Pruitt, we develop a macroeconomic model to account for these large differences.[2] Our starting point is the canonical stochastic neoclassical growth model with price-taking households and firms, interacting in competitive spot markets for goods and labor. Within this framework, age differences can arise from factors related to preferences (or, succinctly, differences in labor supply), technology (labor demand), or both.

The joint behavior of hours and wages over the business cycle provides the necessary evidence to distinguish between these two channels. Variants of the neoclassical model featuring only age-specific labor-supply differences cannot reconcile the fact that volatilities of *both* hours and wages for young workers are greater than those of older workers. By contrast, variants featuring cyclical differences in age-specific labor demand can. We show how a model featuring capital-experience complementarity in production — when age is equated with labor-market experience — generates volatilities of hours and wages across age groups that match those in the U.S. data.

With Martin Gervais and Yaniv Yedid-Levi, we study another stark feature of the labor market: age differences in unemployment, and specifically why unemployment is so much higher for the young.[3] For example, the unemployment rate in the U.S. for individuals aged 20–24 is approximately 2.5 times that of the prime-aged. We show that the declining age profile of unemployment is due to the fact that the rate at which workers separate from employment matches declines over the life cycle.

To address this subject, we consider a search-and-matching model of the labor market in which workers learn about their "occupational fit." This interest in occupational fit is motivated by the fact that occupational mobility also declines over the life cycle. In our model, young workers enter the labor market not knowing the occupation for which they are best suited. To learn this, they sample occupational matches over their careers, and thus accumulate knowledge about their best occupation, a form of human capital. Since young workers are more likely to be in occupations of poor fit, they are more likely to separate, and hence experience higher unemployment.

We find that a calibrated version of this model does a surprisingly good job at matching the life-cycle profile of separation rates, unemployment rates, and occupational mobility. Moreover, the model is able to rationalize a significant portion of the fall in aggregate unemployment in the U.S. from the mid-1970s to the present when aging of the workforce is accounted for.



Disappearing Routine Jobs

In the past three decades, the U.S. labor market has seen the emergence of two new phenomena: job polarization and jobless recoveries. Job polarization

refers to the increasing concentration of employment in the highest- and lowest-wage occupations as jobs in middle-skill occupations disappear. Jobless recoveries refer to periods following recessions in which rebounds in aggregate output are accompanied by much slower recoveries in aggregate employment. We have argued that these phenomena are related.[4]

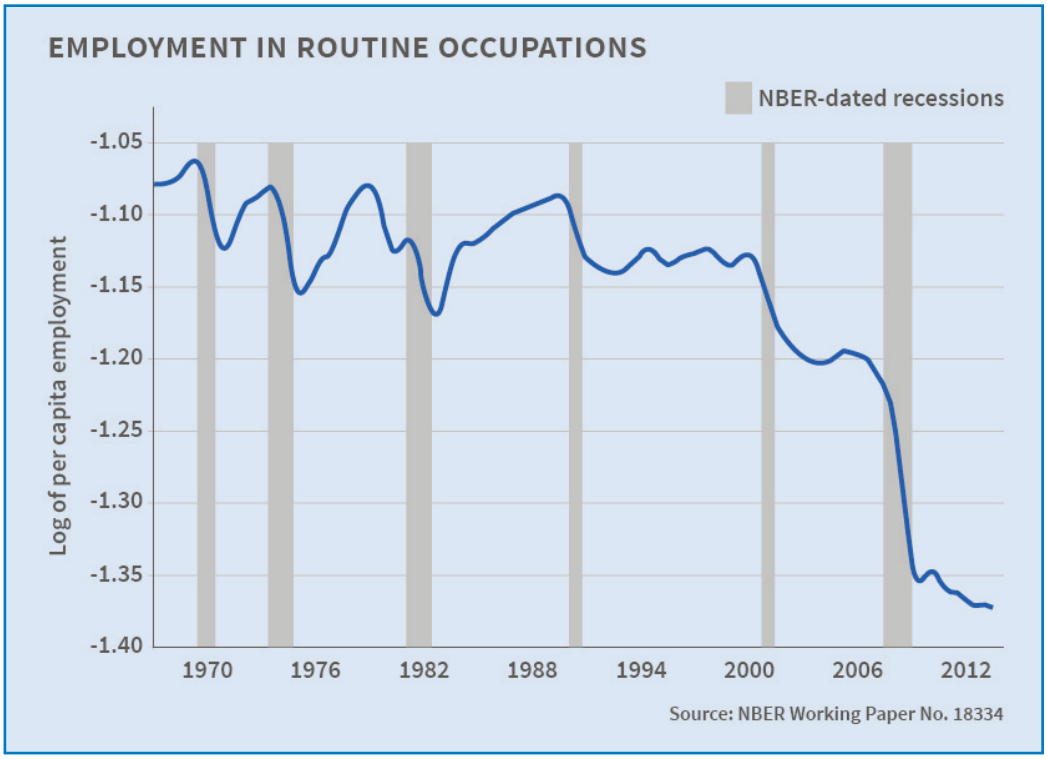
Job polarization has been linked to progress in robotics, computing, and information and communication technology. This technological progress has resulted in a decline in the demand for labor in occupations that perform "routine" tasks — tasks that are limited in scope and can be performed by following a well-defined set of procedures. The declining share of aggregate employment in routine occupations has been well documented in the job-polarization literature.

What is less well known is that not only has the share of routine occupations in aggregate employment been falling, but the *per capita* level of employment in those occupations has been falling as well. The graph below illustrates this: Since about 1990, there is an obvious 28 log-point fall in per capita routine employment. Equally clear is that this fall has not been gradual, but has concentrated around economic downturns; approximately 90 percent of the fall occurred in the last three recessions.

In this same period, the behavior of the employment-to-population ratio following recessions has undergone a distinct break from previous postwar episodes. During the recoveries from the last three latest recessions (those ending in 1991, 2001, and 2009), aggregate employment continued to decline for years following the turning point in aggregate output. By contrast, previous postwar recoveries were characterized by vigorous rebound of *both* per capita real GDP and employment.

We link this change in the nature of economic recoveries to the behavior of routine employment. As evidenced in Figure 2, per capita employment in routine occupations fell and never recovered following each of the 1991, 2001, and 2009 recessions. Prior to job polarization, routine-job loss in recessions was accompanied by strong routine-job recoveries. This, too, is evident in Figure 2 after the recessions of 1970, 1975, and 1982, which were all typical "job-yes" recoveries. Moreover, we find that jobless recoveries are observed only in these disappearing, middle-skill jobs; employment in "non-routine" occupations experience only mild contractions — if at all — during recessions, and have experienced essentially no change in the nature of their recoveries. Together, these facts indicate that the lack of recovery in routine occupations accounts for the jobless recoveries experienced in the aggregate. Unsurprisingly, prior to job polarization, jobless recoveries did not occur.

We further establish this link quantitatively, via simple counterfactual exercises. Had employment in routine occupations recovered as it did prior to job polarization, the U.S. economy would not have experienced jobless recoveries. Finally, we develop a simple search-and-matching model of the labor market linking job polarization and jobless recoveries, and show how it can account for our salient empirical findings. The model emphasizes the role of job-finding rates in the dynamics of jobless recoveries. Using the Current Population Survey (CPS), we demonstrate that the model is consistent with the key properties of transition rates derived from the individual-level data.



With Guido Matias Cortes and Christopher J. Nekarda, we conduct a more in-depth study of the matched individual-level data from the CPS.[5] We analyze flows into and out of employment in routine occupations to better understand the process by which routine occupations have declined, and who the disappearance is affecting at the microeconomic level.

The bulk of the disappearance of routine employment is accounted for by changes in the "entry rates" (i.e. job-finding rates) into routine occupations. First, we find a fall in job-finding rates from unemployment into routine employment; this includes falls for both the unemployed who

most recently worked in routine jobs and for the unemployed who most recently worked in non-routine jobs. The second important change is the fall in job-finding rates from non-participation to routine employment.

We then consider the extent to which these key entry-rate changes are due to changes in the demographic composition of the U.S. population, or in the behavior of individuals with particular demographic characteristics. We find that these changes reflect behavioral changes. The fall in the entry rate into routine "brawn" occupations is particularly acute for males, the young, and those with lower levels of education; the fall in the entry rate into routine "brain" occupations is particularly strong for females, and those with higher levels of education.

Finally, we disentangle the relative importance of demographic vs. behavioral channels in the decline of routine employment. Changes in demographic composition account for only a small part of the decline in the aggregate. By contrast, the changes in the labor market that appear to account for the largest part of the decline in routine jobs are the declines in the probabilities of transitioning from unemployment and nonparticipation into routine jobs. Changes in the transition propensities of young workers are of greatest importance.

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Privatizing Social Security: Lessons from Mexico

Justine Hastings

Justine Hastings is a Research Associate in the NBER's Programs on Industrial Organization, Public Economics, Environmental and Energy Economics, Education Economics, and Aging. She is an active participant in the Household Finance Working Group. An associate professor of economics with tenure at Brown University, she teaches industrial organization, public economics and education economics. She holds a Ph.D. in economics from the University of California, Berkeley.

Hastings is a co-editor of the Journal of Public Economics, *and has served as a managing editor of the* International Journal of Industrial Organization. *She serves on the Academic Research Council of the United States Consumer Financial Protection Bureau and on the Council of Economic Advisors to the Governor of Rhode Island.*

Hastings' research focuses on understanding consumer behavior, firm behavior, and the implications both have for designing public policy. She has studied issues related to primary and secondary school choice, privatization of social security, student loan markets, and the operation of energy markets. She enjoys collaborating with policy-makers.

A California native, Hastings lives in Providence, RI, with her husband. She is a vegetarian who enjoys stand-up paddle boarding, horse-back riding, running, cooking, and traveling in Latin America.

Social security privatization is a top political and economic issue for countries world-wide faced with aging populations and underfunded pensions. Often seen as a third-rail of American politics, aging populations may soon force the country to make tough decisions about our pay-as-you-go system, and current public pension crises have revived the private-accounts vs. public pension debate, as state governments faced with pension fund shortfalls consider moving workers toward 401(k)-style plans.

A handful of countries have already opted for partially- or fully-privatized social security systems. What can we learn from their experiences? Can a privatized social security system deliver greater retirement wealth by allowing individuals greater control over their investment decisions? Does the free market deliver price competition and efficiency? My recent research uses administrative data from OECD countries in Latin America with privatized schemes to illuminate the potential benefits and pitfalls of social security privatization. In this article, I highlight findings from two such projects.

Does Competition Work?

Mexico launched a fully-privatized defined contribution plan in 1997, with 17 participating fund managers which could compete to manage investors' privatized social security accounts. Given the tight regulations on investment vehicles, fund managers each offered one, essentially homogenous investment product. Investors could choose which firm they wanted to have manage and invest — for a fee — their personal social security account.

Despite the large number of competitors selling an essentially homogeneous product, management fees and fund manager profits were high. Fund managers charged an average load (a fee taken as a share of account contributions at the time of contribution) of 23 percent and an

INVESTMENT CHARGES FOR MEXICAN SOCIAL SECURITY ACCOUNTS

Firm market share	>12%	4-12%	<4%
Number of firms	4	4	9
Total share of accounts	56%	32%	12%
Avg. initial load	26.2%	16.8%	18.3%
Avg. annual fee on balance	0.38%	1.56%	0.75%
Avg. number of sales agents	8,325	8,842	2,644

Source: CONSAR (National Commission of the Retirement Savings System)

annual fee on assets under management of 0.63 percent, implying that a 100-peso deposit earning a 5 percent annual real return would only be worth 95.4 pesos after five years. Indeed, five years after the launch of the privatized system, fund managers' annual return on expenditure averaged 39 percent. How could competition among many firms result in fees at this level?

The new system was characterized not only by high fees but by high expenditures on sales force and advertising. The government, trusting competitive pressures to work to inform customers and incentivize low prices, invested little in financial education, but spent advertising funds on simply informing workers that they needed to choose among the approved social security fund managers.

Based on archived television advertisements and sales force training manuals, fund managers spent substantial resources appealing to investor emotion by communicating themes of experience, winning, and wisdom in investment. When fees were mentioned at all, it was in vague terms or focused only on the fee dimension on which the firm was relatively less expensive. Many advertising claims were technically truthful but misleading. For example, one advertisement, featuring apples, claimed that the fund manager did not take a bite out of your investment apple like other firms did. This is technically true if "bite" referred only to load fees; this firm charged no loads. However it charged by far the highest fee on assets under management. For those not working in the formal sector, or for workers with large account balances, this would in fact be the most expensive fund manager.

Fully-informed, rational decision makers shouldn't be fooled by such advertisements, and price competition should lead to an informed marketplace. But recent theoretical models illustrate that when there is a segment of inexperienced or uninformed consumers, and firms can use advertising or complicated price structure to confuse or persuade, competition may result in high-intensity advertising, complex pricing, price obfuscation, and supra-competitive prices.[1]

Is this what happened in Mexico? How much of the observed high price levels can be explained by the impact of sales force on investors' attention to management fees when choosing a fund manager? In joint work, Ali Hortaçsu, Chad Syverson, and I answer these questions using administrative data from Mexico's social security system.[2] The data cover all workers' contributions, balances, and investment choices for over a decade, as well as detailed information on sales-force deployment by fund managers to localities across Mexico. We use these data to examine how competition played out at the start of the system and to measure the impact of sales force on investor sensitivity to fees and brand name; we measure how much, if at all, sales force contributed to high fees in the market.

We develop a model of workers' choices of fund managers, allowing workers' price sensitivities and brand values to vary with their exposure to a fund manager's sales force as well as with the workers' demographic characteristics. The model incorporates both informative and persuasive effects of advertising, allowing exposure to sales force to both increase awareness of the product and to influence consumer's perceptions of price and non-price attributes (for example by confusing pricing or diminishing its importance).

We find that exposure to sales force had a significant, persuasive impact on investors' decisions. Sales force caused lower price sensitivity, particularly among lower-income workers, as well as higher attention to non-price brand attributes. The qualitative patterns in advertisement archives mentioned above play out in hard data on sales-force exposure and choice of fund manager.

By estimating the impact of advertising in the context of a model of investment decisions, we can learn much more about how such advertising strategies impact the success of the privatized markets. For example, we can gauge the overall contribution of advertising costs to high equilibrium fees. Using model estimates we can ask what fees would have been if sales force had no impact on preferences for price or brand attributes. When we do this, we find that total management fees paid by Mexican workers in the system would have been about 60 percent lower. Individuals would have been more price-sensitive, and fund managers would have responded by competing more on price. Competition did occur in this privatized system but it was competition on persuasion and not on price, shifting a significant fraction of GDP from savings for retirement to fund manager profits and advertising expenditures.

While it is probably impossible to regulate what salespeople communicate to potential clients, are there ways to increase competition by altering features of the market? This is an important question in policy discussions from Medicare to school choice to savings for retirement. We use our results to glean insights into how regulators might improve performance in privatized social-safety-net markets like this one.

For example, introducing a government or government-regulated competitor is often suggested as a policy tool for increasing competition. The notion is that if private competition is limited, a government player could enter, sell at cost, and enforce price competition in the market. We simulate this intervention, and find that introducing a government player does little to make the market more price-competitive. In fact, many of the existing firms in the market respond to this entry by raising their fees even further. The intuition is simple: If there are many unsophisticated consumers in the market who can be convinced by sales force to value brand over price, savvy consumers will buy from the cheap government option and private firms can raise prices on the remaining price-inelastic customer base. Think Walmart and the mom-and-pops. When Walmart comes to town, the mom-and-pops can try to match their price, or they can raise prices knowing that only price-inelastic customers will still visit their store. Walmart helps the mom-and-pop price discriminate. A government competitor in privatized social security systems or other social insurance markets could too, with regressive consequences.

Alternatively, could demand-side policies that decrease consumer confusion and increase price sensitivity — say by educating investors or simplify-

ing fees into an easy-to-understand format — deliver a price-competitive market? In short, yes. We simulate what fees would have been if the most price-insensitive segment of the market simply paid the average level of attention to fees we observe among workers.

This intervention works: By shrinking the price-insensitive segment of the population, the policy lowers prices. Furthermore, there is a complementarity between this demand-side intervention and the supply-side policy of introducing a public option. Once consumers pay more attention to prices, the government player becomes effective, stealing substantial business from private firms unless they lower price. Combining policies would lead to a 74 percent reduction in management costs. That's a big savings given that contributions are 6.5 percent of private-sector labor earnings.

In sum, privatization can deliver efficiency, but only if investor behavior and firm response is incorporated into market design.

Designing Nudges for Fettered Consumers and Sophisticated Firms

Further evidence could be seen several years later when the government began reforms to address persistently high fees. Sensing that investor confusion about fees might be to blame, the government introduced a new fee index in mid-2005 to increase transparency and price-sensitivity. Did creating and promoting a readily understandable fee index help create a more efficient market? What do we learn about pension-plan design from Mexico's experience?

In joint work with Fabian Duarte, I again make use of rich administrative data to answer these questions.[3]

First, I establish that even several years after the start of the system, and even with regulatory improvements to make switching fund managers easier, fees remained very high. Although millions of investors switched fund managers in a given year, they did not on average switch to lower-price fund managers. Perhaps, as found in the prior paper, sales agents obfuscated prices, presenting misleading aspects of price or emphasizing non-price attributes as the most important factors upon which to base choices. Investor choices appeared to provide no incentive for firms to lower price.

By introducing a fee index, the government hoped both to make "price" more salient and to force informative advertising, at least with respect to this one measure of price. The new fee index combined load and balance fees according to a particular formula. Sales agents were required to obtain a client's signature on a form showing a table of comparative fee-index values at the time of fund manager choice. Post-policy, workers became very sensitive to the fee index, choosing funds with a lower index on average. The policy worked at changing choices.

However, because the index was a particular combination of load and balance fee, moving to a lower-fee-index fund could actually lead workers to higher-cost funds, depending on the expected size of their formal-sector labor-earnings relative to their existing balance. Workers clearly did not understand how their personal circumstances affected the relative management costs across fund managers. A full third of those seeking lower-fee-index funds moved to funds with higher management costs for them, given their account characteristics.

Once investors flocked to lower-fee-index fund managers, fund managers also responded, but not in the way the government hoped. Rather than lowering load and balance fees, they exploited the index formula and restructured their fees to raise revenues. The fee index overweighted load fees and under-weighted fees on assets under management. This gave firms an incentive to lower their load fees and to increase their management fees; lowering their index but not necessarily their revenues. This is the strategy fund managers followed. Fee restructuring mitigated the intended gains from the policy and redistributed the burden of management fees from higher-income to lower-income investors.

If consumer confusion and price insensitivity inhibit price competition, can distilling complex information into an easily understandable index number promote competition? Yes and no. While the new policy was successful in making investors sensitive to the new information provided, it led many to make long-term decisions not in their best interests. In theory, the new index adopted by regulators should have made fees simpler and more transparent. However, in their efforts to simplify the various fees charged into a single number, their formula did not accurately reflect true costs to investors. Firms hid behind the index, restructuring fees to increase revenues while obfuscating price increases using the index formula.

Conclusions

Overall, these research results highlight some of the challenges of privatizing social security. People face decision-making costs and difficulty with complex decisions involving long-term risks and benefits. Policies can recognize these shortcomings by designing markets that make decisions easier and by devoting attention to firm incentives. Failing to do so can take policy results far afield from their target impact.

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[1] *See for example B. Carlin, "Strategic Price Complexity in Retail Financial Markets,"* Journal of Financial Economics, *91(3), 2009, pp. 278–87; and G. Ellison and S. F. Ellison, "Search, Obfuscation, and Price Elasticities on the Internet," NBER Working Paper No. 10570, June 2004, and* Econometrica, *77(2), 2009, pp. 427–52.* Return to text.

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Real Exchange Rates and the Balassa-Samuelson Effect Revisited

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From 2003-13, Devereux was a Bank of Canada Research Fellow. He has had visiting positions at University College Dublin, the Hong Kong Institute for Monetary Research, the Hong Kong University of Science and Technology, the International Monetary Fund, and the Bank for International Settlements. He was the recipient of the 2010 John Rea Prize from the Canadian Economic Association for the economist with the best five-year track record in Canada.

He has a Ph.D. from Queen's University in Kingston, Ontario, and has held positions at the University of Toronto and Queen's University.

It has long been acknowledged that prices of consumer goods differ substantially across countries, and vary considerably between any two countries over time. In the aggregate, relative goods-prices compared across countries are defined as real exchange rates. Understanding real exchange rate determination remains one of the most important and yet most difficult questions in international economics.

The central theoretical framework for interpreting real exchange rates attributes persistent movements in real exchange rates over time and across countries to cross-country differentials in sectoral total-factor productivities. This is known as the Balassa-Samuelson model.[1] The forces that drive this model are straightforward; higher productivity growth in traded-goods sectors tends to increase local input costs and therefore prices of non-tradable goods. Since traded-goods prices tend to be equalized across countries, this raises the local price level, which is a real exchange rate appreciation.

The Balassa-Samuelson model has been widely used in analyzing real exchange rate determination. One reason for its popularity is that it is consistent with the widespread observation that price levels tend to be higher in comparatively wealthy countries. There is a strong positive relationship between price levels and GDP per capita. This is sometimes known as the "Penn effect," after the two University of Pennsylvania economists, Alan Heston and Robert Summers, who first documented it.[2]

Despite the simplicity and appeal of the theory, it is widely acknowledged that the Balassa-Samuelson model does not do well in explaining real exchange rates, except over very long time horizons.[3] In most empirical studies, especially in time-series data, the evidence for the effect of productivity growth on real exchange rates is quite weak. This problem is especially apparent in the study of real exchange rate movements among high-income, financially developed countries with floating exchange rates.

This short review essay describes my research agenda on real exchange rate determination, the Penn effect, and the Balassa-Samuelson theory, using a new data set of European price levels at a disaggregated level. In an initial paper, Martin Berka and I established that the Penn effect is clearly observed among European Union countries, both in cross-section and time series, and that this relationship is tied closely to trend movements in relative non-traded goods prices.[4] In a second paper, Charles Engel, Berka, and I find strong evidence for an amended version of the Balassa-Samuelson model in an application to countries within the Eurozone.[5]

There is a large literature on the explanation of secular movements in real exchange rates and the Balassa-Samuelson effect. As noted above, a prediction of many theoretical models is that the cross-country distribution of real exchange rates should be related to relative GDP per capita. Kenneth Rogoff, for example, uses relative GDP per capita as a proxy for relative productivity in the traded sector.[6] In cross-sectional 1990 data that includes poor and rich countries, he finds a strong relationship between relative GDP per capita and the real exchange rate.[7] However, Rogoff then notes "...whereas the relationship between income and prices is quite striking over the full data set, it is far less impressive when one looks either at the rich (industrialized) countries as a group, or at developing countries as a group." In particular, among high-income countries with floating exchange rates, there is little evidence of a relationship between GDP per capita and the real exchange rate.

The Balassa-Samuelson theory suggests real exchange rates should be related to sectoral total-factor productivity (TFP) rather than income levels per se. There are few studies that examine the cross-sectional dimension of the Balassa-Samuelson hypothesis

using sectoral data on TFP, because most TFP data that is used for cross-country comparisons is in index form and is only useful for looking at the time-series dimension. But the evidence favorable to the Balassa-Samuelson effect is much weaker in time-series. In fact, even the basic prediction of the Balassa-Samuelson model needs to be refined when traded goods in different countries are not perfect substitutes for one another.[8] In that case, the relationship between the real exchange rate and relative productivity differentials should be conditioned on the terms of trade. A novel aspect of my work with Berka and Engel is that it shows that the inclusion of unit labor costs, in a real exchange rate regression, in addition to relative sectoral productivities, acts as a proxy for the terms of trade and represents a well-specified structural representation of the real exchange rate, even when home and foreign-traded goods are not perfect substitutes.

A notable finding of some of the literature on real exchange rates is that there is often stronger evidence of the effect of relative sectoral productivity on a country's internal relative prices than can be found in between-country real exchange rates.[9] This may be due to the presence of nominal exchange rate fluctuations that have little to do with relative productivity differentials. Again, this suggests to us that a focus on real exchange rate determination in a sample where nominal exchange rate movement is absent or minimized may be a fruitful avenue of investigation.

My paper with Berka examines the behavior of real exchange rates, both at aggregate and disaggregate levels, across a large sample of European countries over a 15-year period ending in 2009.[10] The price data is very broad, encompassing almost the whole consumer basket, and it has an extremely high degree of cross-country comparability. The sample allows for construction of a panel of real exchange rates at the sectoral and aggregate level over the period 1995–2009. Since the data is in levels, we can construct a real exchange rate distribution across countries at any point in time and track the movement of this distribution over time.

We find large and persistent deviations from absolute PPP among all European countries. These deviations hold for all categories of goods, but are much more pronounced for non-traded than for traded goods. Even among Eurozone members, there are persistent departures from PPP that show no signs of erosion within the sample. A striking feature of real exchange rates in the data is that they are highly positively correlated with the internal relative price of non-traded to traded goods. This relationship holds true both across countries and over time. Over the whole sample, the cross-country correlation between the real exchange rate and the relative price of non-traded goods is 0.89, while the time series correlation is 0.84.

We also find that there is a highly positive correlation between deviations from PPP in traded goods prices, and the internal relative price of non-traded goods, again both among countries and over time. This suggests that non-traded inputs into retail prices of traded goods may play an important role in deviations from PPP in the traded goods category. Finally, we find striking evidence for the "Penn effect;" real exchange rates are very closely tied to GDP per capita relative to the European average, again *both* in comparisons across countries and in movement over time. It is quite striking that this pattern holds, even though the per-capita GDP differential among European countries is of far smaller magnitude than among developed and developing countries. What this suggests is that for European countries, the relative stability of bilateral nominal exchange rates may have been important in allowing for a more fundamental-based evolution of real exchange rates, in contrast to the findings from a wider sample of countries where nominal exchange rate variation becomes a much more important element.

My paper with Berka and Engel builds on this study, using a similar data-set, but focusing on the underlying determinants of real exchange rates, and providing a more direct test of the Balassa-Samuelson theory of real exchange rates using sectoral data on prices to construct model-based real exchange rates and linking these with sectoral data on productivity growth.[11] We restrict our focus to the properties of real exchange rates in the Eurozone, where bilateral nominal exchange rates are fixed.[12] The reason for the restriction was our conjecture that this would allow for a cleaner examination of the relationship between productivity growth and relative-price adjustment. It is well known from the literature on open-economy macroeconomics that floating nominal exchange rates are influenced by monetary policy decisions and shocks, financial shocks, and quite possibly also by non-fundamental shocks. When nominal prices adjust more slowly than the nominal exchange rate, these shocks also influence the real exchange rate. In light of this, it is likely that the observation of real exchange rates among countries that share a common currency is fertile ground for seeking evidence of the Balassa-Samuelson effect because the short-run real exchange rate movements are not driven by the monetary and financial factors that influence nominal exchange rates.

We link a panel of Eurozone real exchange rates with measures of sectoral total-factor productivities for each country, as well as a separate measure of unit labor costs. We then conduct panel regressions of real exchange rates to explore the link between real exchange rates and productivity. The empirical results indicate that, for the Eurozone countries, there is substantial evidence for an amended Balassa-Samuelson effect. The amended Balassa-Samuelson model involves allowing for unit labor costs as a separate variable affecting real exchange rates, independent of sectoral total-factor productivity. As described above, unit labor cost plays a dual role as a proxy for endogenous movements in the terms of trade and separate exogenous shifts in labor market conditions that are not related to total-factor productivity.

We find that an increase in total-factor productivity in traded goods is associated with a real appreciation, and an increase in total-factor productivity in non-traded goods correlates with a real depreciation. But these links appear only when they separately control for unit labor cost differentials across countries. Holding productiv-

ity constant, higher unit labor costs lead to real exchange rate appreciation. This suggests that in fact there are separate institutional forces driving factor prices, independent of factor productivities.

We then develop a theoretical model of an amended Balassa-Samuelson theory by allowing for shocks to labor supply that are unrelated to productivity. Differences in unit labor costs may influence real exchange rates both through their effects on the relative prices of non-traded goods and also the terms of trade. We examine the implications of the model for the Balassa-Samuelson theory when nominal exchange rates are not volatile, since the countries share a common currency, but nominal prices are sticky. We use the model to generate a panel of real exchange rate levels and movements over time which matches the European panel for the Eurozone countries. Using the same cross-section and time-series dimensions as the data, the model is simulated using shocks to sectoral productivities and labor supply shocks. The sectoral productivity shocks in the model are generated in a model-based panel which has the same means, serial correlation, and covariance matrix as in the European data. Shocks to labor supply, which in addition to the productivity shocks underlie the dynamics of unit labor costs in the model, are inferred from relative movements in hourly wages observed over the sample period.

We find a close relationship between the empirical estimates and the model-simulated estimates. Real exchange rates in the model are driven by the amended Balassa-Samuelson pattern of shocks to sectoral productivity and unit labor costs, and the simulation estimates are extremely close to those in the Eurozone data. The sticky price version of the model, where 20 percent of prices change every quarter, best explains the empirical estimates. Although a fully flexible price version of our model does quite a good job in explaining the empirical results, it tends to predict movements in real exchange rates in response to traded-sector productivity and unit labor costs that are too large relative to the empirical estimates.

The channel through which relative productivity levels influence real exchange rates is their effect on the relative price of non-traded goods. In previous work, Engel produces evidence that little of the variance of changes in U.S. real exchange rates can be accounted for by the relative price of non-traded goods.[13] Almost all of the variance arises from movements in the consumer prices of traded goods in the U.S. relative to other countries. Several studies suggest that differences in consumer prices of traded goods across countries may be accounted for by changes in the relative price of non-traded distribution services, but the evidence for this hypothesis is weak for high-income countries.[14] However, the seminal paper by Michael Mussa pointed out that real exchange rates are much less volatile among countries with fixed nominal exchange rates.[15] So the absence of fluctuating exchange rates in the Eurozone suggests a possible reason that the real exchange rate/non-traded goods link becomes apparent in our data.

It is important to note that the data used in these studies is disaggregate, but not micro-data on individual goods prices. A number of important recent contributions have used micro-data on individual prices from a single retailer to construct individual-goods-level real exchange rates.[16] One key difference between these studies and ours is that, as noted above, our price data has both broad coverage, governing almost the complete consumer basket in the Eurozone countries studied, and a very high degree of cross-country comparability. We provide an extensive data appendix, describing the construction of the data, and emphasize the extensive set of procedures that Eurostat follows to ensure that goods in each of the categories are measuring very similar products across countries.[17]

A second unique feature of the data we used is an annual panel of sectoral TFP levels across nine Eurozone countries. The data allow us to make cross-sectional comparisons, as well as the time comparisons, across sectors and countries. To our knowledge, this is the first time that a sectoral TFP panel in levels has been used to study real exchange rate determination and the Balassa-Samuelson hypothesis.

It is tempting to conclude from these results that relative-price adjustment and real exchange rates within the Eurozone system have occurred efficiently, given that Balassa-Samuelson represents a benchmark model of efficient relative-price adjustment in the face of differential productivity-growth rates. But in fact this inference cannot be directly made, since our amended Balassa-Samuelson framework features movement in unit labor costs that may represent underlying distortions or structural inefficiencies within individual economies. Hence, while the results provide encouraging support for the traditional view of real exchange rates, they cannot be taken as evidence that trends in real exchange rates within the Eurozone have been consistent with efficient cross-country relative-price adjustment.

A second key caveat is that the sample period of these studies does not include the European debt crisis for 2010–12. In the face of a large crisis, it is likely that countries within a single currency area would suffer from not having the ability to adjust exchange rates.[18] So, again, the studies discussed above do not claim that eliminating national currencies and exchange rate adjustment is without costs. But an important agenda for future research is to see how intra-European relative-price adjustment over this episode was related to the extent of the downturns across countries and regions.[19]

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[1] *See B. Balassa, "The Purchasing-power Parity Doctrine: a Reappraisal,"* Journal of Political Economy, *72(6), 1964, pp.584–96, and P. A. Samuelson, "Theoretical Notes on Trade Problems,"* The Review of Economics and Statistics, *46(2), 1964, pp. 145–54.* Return to text.

[2] *See for example, R. Summers and A. Heston, "The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950–1988,"* Quarterly Journal of Economics, *106(2), 1991, pp. 327–68. The Balassa-Samuelson model rationalizes this relationship based on technological, or supply side forces. There are alternative theories coming from pref-*

erences and demand side. For instance, J. H. Bergstrand, "Structural Determinants of Real Exchange Rates and National Price Levels: Some Empirical Evidence," American Economic Review, *81(1), 1991, pp. 325–34. Bergstrand argues that trend differences in average economic growth, combined with income elasticity of demand for services that exceeds unity, plays an important role in explaining the relationship.* Return to text.

[3] *M. Chinn, and L. Johnson, "Real Exchange Rate Levels, Productivity, and Demand Shocks: Evidence from a Panel of 14 Countries," NBER Working Paper No. 5709, August 1996; K. Rogoff, "The Purchasing Power Parity Puzzle,"* Journal of Economic Literature, *34(2), 1996, pp. 647–68; J. Tica, and I. Druzic, "The Harrod-Balassa-Saumelson Effect: A Survey of Empirical Evidence," University of Zagreb Working Paper 06-7/686, 2006; J. R. Lothian, and M .P. Taylor, "Real Exchange Rates Over the Past Two Centuries: How Important is the Harrod-Balassa-Samuelson Effect?"* The Economic Journal, *118(532), 2008, pp. 1742–63; Y. Chong, O. Jordà, and A. M. Taylor, "The Harrod-Balassa-Samuelson Hypothesis: Real Exchange Rates and their Long-run Equilibrium,"* International Economic Review, *53(2), 2012, pp. 609–33.* Return to text.

[4] *M. Berka, and M. B. Devereux, "What Determines European Real Exchange Rates?" NBER Working Paper 15753, February 2010.* Return to text.

[5] *M. Berka, M. B. Devereux, and C. Engel, "Real Exchange Rates and Sectoral Productivity in the Eurozone," NBER Working Paper No. 20510, September 2014; see also M. Berka, M. B. Devereux, and C. Engel, "Real Exchange Rate Adjustment in and out of the Eurozone,"* American Economic Review, Papers and Proceedings, *102(3), 2012, pp. 179–85.* Return to text.

[6] *K. Rogoff, "The Purchasing Power Parity Puzzle,"* Journal of Economic Literature, *34(2), 1996, pp. 647–68.* Return to text.

[7] *P. R. Bergin, R. Glick, and A. M. Taylor note that this cross-sectional relationship has strengthened over time, and suggest that the tradability of goods is endogenous and may increase as a sector's productivity grows. P. R. Bergin, R. Glick, and A. M. Taylor, "Productivity, Tradability, and the Long-run Price Puzzle," NBER Working Paper No. 10569, June 2004 and* Journal of Monetary Economics, *53(8), 2006, pp. 2041–66.* Return to text.

[8] *G. Benigno, and C. Thoenissen, "Consumption and Real Exchange Rates with Incomplete Financial Markets and Non-traded Goods,"* Journal of International Money and Finance, *27(6), 2008, pp. 926–48.* Return to text.

[9] *Studies in this tradition include J. D. Gregorio, A. Giovannini, and H. C. Wolf, "International Evidence on Tradables and Nontradables Inflation," NBER Working Paper No. 4438, August 1993, and* European Economic Review, *38(6), 1994, pp. 1225–44; M. B. Canzoneri, R. E. Cumby, and B. Diba, "Relative Labor Productivity and the Real Exchange Rate in the Long Run: Evidence from a Panel of OECD Countries," NBER Working Paper No. 5676, July 1996, and* Journal of International Economics, *47(2), 1996, pp. 245–66; and J. Lee and M.-K. Tang, "Does Productivity Growth Lead to Appreciation of the Real Exchange Rate?"* Review of International Economics, *94(1), 2007, pp. 276–99.* Return to text.

[10] *M. Berka, M. B. Devereux, "Trends in European Real Exchange Rates," NBER Working Paper No. 15753, February 2010, (as "What Determines European Real Exchange Rates?") and* Economic Policy, *28(74), 2013, pp. 193–242.* Return to text.

[11] *M. Berka, M. B. Devereux, and C. Engel, "Real Exchange Rates and Sectoral Productivity in the Eurozone," NBER Working Paper No. 20510, September 2014.* Return to text.

[12] *Our sample actually includes the Eurozone countries over the period from 1995 onwards, four years before the adoption of the single currency. But during this period, bilateral exchange rate volatility among the future member countries was extremely low.* Return to text.

[13] *C. Engel, "Accounting for US Real Exchange Rate Changes," NBER Working Paper No. 5394, December 1995, and* Journal of Political Economy, *130(3), 1999, pp. 507–38.* Return to text.

[14] *M. B. Devereux, "Real Exchange Rate Trends and Growth: A Model of East Asia,"* Review of International Economics, *7(3), 1999, pp. 509–21; C. Engel, "Accounting for US Real Exchange Rate Changes," NBER Working Paper No. 5394, December 1995, and* Journal of Political Economy, *130(3), 1999, pp. 507–38; A. Burstein, J. C. Neves, and S. Rebelo, "Distribution Costs and Real Exchange Rate Dynamics During Exchange-rate-based Stabilizations," NBER Working Paper No. 7862, August 2000, and* Journal of Monetary Economics, *50(6), 2003, pp. 1189–1214; C. Betts and T. J. Kehoe, "U.S. Real Exchange Rate Fluctuations and Relative Price Fluctuations,"* Journal of Monetary Economics, *53(7), 2006, pp. 1297–1326.* Return to text.

[15] *M. Mussa, "Nominal and Real Exchange Rate Regimes and the Behavior of Real Exchange Rates: Evidence and Implications,"* Carnegie-Rochester Conference Series on Public Policy, *25, 1986, pp. 117–214.* Return to text.

[16] *M. Baxter, and A. Landry, "IKEA: Product, Pricing, and Pass-through," Federal Reserve Bank of Dallas, Globalization and Monetary Policy Institute Working Paper 132, 2012; A. Cavallo, B. Neiman, B. and R. Rigobon, "Currency Unions, Product Introductions and the Real Exchange Rate,"* Quarterly Journal Economics, *129(2), 2014, pp. 529–95; G. Gopinath, P.-O. Gourinchas, C.-T.Hsieh, and N. Li, "International Prices, Costs and Markup Differences," NBER Working Paper No. 14938, April 2009, (as "Estimating the Border Effect: Some New Evidence") and* American Economic Review, *101(6), 2011, pp. 2450–86; A. Burstein, and N. Jaimovich, "Understanding Movements in Aggregate and Product-level Real Exchange Rates," Manuscript, 2009.* Return to text.

[17] *Eurostat and OECD (2012).* Eurostat-OECD Methodological Manual on Purchasing Power Parities. *ISBN: 978-92-79-25983-8, http://*

ec.europa.eu/eurostat/en/web/products-manuals-and-guidelines/-/KS-BE-06-002
Return to text.

[18] *Against this, however, David Cook and I note that when interest rates are constrained by the zero bound, the movement in the exchange rate in response to some shocks may exacerbate rather than mitigate the effects of the shock, and it may be better in an ex-ante sense for a country to be in a common currency area. See D. Cook and M. B. Devereux, "The Optimal Currency Area in a Liquidity Trap," NBER Working Paper No. 19588, October 2013.*
Return to text.

[19] *Rudolfs Bems and Julian di Giovanni provide interesting evidence on price and expenditure adjustment during the recent crisis for Latvia. R. Bems and J. D. Giovanni, "Income Induced Expenditure Switching," Manuscript, 2013.*
Return to text.

NBER News

Four New Members Elected to NBER Board of Directors

At its September 2014 meeting, the NBER Board of Directors elected four new members.

Benjamin Hermalin is the new representative of the University of California, Berkeley. He succeeds **George Akerlof**, who was elected director emeritus. Hermalin holds professorships in Berkeley's Economics Department and its Haas School of Business. In the latter, he is the Thomas & Alison Schneider Distinguished Professor of Finance. He is a co-editor of the *RAND Journal of Economics*. Hermalin received his Ph.D. from MIT in 1988, the same year he joined the Berkeley faculty as an assistant professor in the Department of Economics and the School of Business. He became a full professor in 1998. He has held numerous administrative posts at Berkeley, including serving as interim dean of the Haas School for most of 2002 and as Economics Department chair from 2005 until 2008. He is currently vice chair of the Academic Senate, Berkeley Division, and will be its chair in 2015–16. His areas of research include corporate governance, the study of organizations, and industrial organization.

Arthur Kennickell is the new representative of the American Statistical Association (ASA), succeeding **Christopher Carroll.** He is assistant director of research and statistics at the Board of Governors of the Federal Reserve System, where he has worked since 1984. He is the former section chief for microeconomic surveys. He has a Ph.D. in economics from the University of Pennsylvania and a B.A. from the University of Chicago. He was the 2007 winner of the Julius Shiskin Memorial Award for innovation in economic statistics. He has long been associated with the development of the Survey of Consumer Finances. Kennickell is a returning member of the NBER board, having previously served as the ASA representative to the NBER from 2004 to 2011.

Cecilia Elena Rouse is the new representative from Princeton University, succeeding **Uwe Reinhart.** She is the dean of the Woodrow Wilson School of Public and International Affairs and the Lawrence and Shirley Katzman and Lewis and Anna Ernst Professor in the Economics of Education. She is the founding director of the Princeton University Education Research Section and a member of the National Academy of Education. Her primary research interests are in labor economics with a focus on the economics of education. Rouse has served as an editor of the *Journal of Labor Economics* and is currently a senior editor of *The Future of Children*. In 1998-99 she served a year in the White House at the National Economic Council and from 2009–11 was a member of the President's Council of Economic Advisers. She is a member of the board of directors of MDRC, and a director of the T. Rowe Price Equity Mutual Funds and T. Rowe Price Fixed Income Mutual Funds. She received her B.A. in economics from Harvard University in 1986 and a Ph.D. in economics from Harvard University in 1992.

William Spriggs is the new AFL-CIO representative on the NBER board, succeeding **Thea Lee.** He is a professor in, and former chair of, the Department of Economics at Howard University and serves as chief economist to the AFL-CIO. He chairs the Economic Policy Working Group for the OECD's Trade Union Advisory Committee. From 2009 until 2012, he served as the assistant secretary for the Office of Policy at the U.S. Department of Labor. He has served as chairman of the Healthcare Trust for the UAW retirees of the Ford Motor Company and as a senior fellow and economist at the Economic Policy Institute, and has worked on the economic staff of the Joint Economic Committee. Spriggs graduated from Williams College and holds a Ph.D. in economics from the University of Wisconsin, Madison. He is a former president of the National Economics Association, the organization of America's professional black economists.

Conferences

Workshop on Methods and Applications for Dynamic Stochastic General Equilibrium Models

The NBER's Workshop on Methods and Applications for Dynamic Stochastic General Equilibrium Models took place at the Federal Reserve Bank of Chicago on October 17–18, 2014. The workshop also serves as a mid-year meeting of the NBER EFSF Workgroup on Methods and Applications for DSGE Models. Alejandro Justiniano and Leonardo Melosi, both of the Federal Reserve Bank of Chicago; NBER Research Associates Jesús Fernández-Villaverde and Frank Schorfheide, both of University of Pennsylvania; and Giorgio Primiceri of Northwestern University organized this year's meeting. These papers were discussed:

- **Thien Nguyen**, Ohio State University, "Bank Capital Requirements: A Quantitative Analysis"
- **Cosmin Ilut**, Duke University and NBER; **Matthias Kehrig**, University of Texas, Austin; and **Martin Schneider**, Stanford University and NBER, "Slow to Hire, Quick to Fire: Employment Dynamics with Asymmetric Responses to News"
- **George-Marios Angeletos**, MIT and NBER, and **Fabrice Collard** and **Harris Dellas**, University of Bern, "Quantifying Confidence"
- **Jinill Kim**, Korea University, and **Francisco Ruge-Murcia**, McGill University, "Extreme Events and the Fed"
- **Nelson Lind**, University of California, San Diego, "Regime-Switching Perturbation for Non-Linear Equilibrium Models"
- **Borağan Aruoba** and **Pablo Cuba-Borda**, Maryland University, and **Frank Schorfheide**, University of Pennsylvania and NBER, "Macroeconomic Dynamics near the ZLB: A Tale of Two Countries"
- **Mark Bognanni**, Federal Reserve Bank of Cleveland, and **Edward Herbst**, Federal Reserve Board, "Estimating (Markov-Switching) VAR Models Without Gibbs Sampling: A Sequential Monte Carlo Approach"
- **Regis Barnichon**, Universitat Pompeu Fabra, and **Christian Matthes**, Federal Reserve Bank of Richmond, "Measuring the Non-Linear Effects of Monetary Policy"
- **James Cloyne**, Bank of England, and **Clodomiro Ferreira** and **Paolo Surico**, London Business School, "The Housing Market and Monetary Policy"

Symposium on Sovereign Debt and Financial Crises

The NBER hosted a symposium in Washington on October 22, 2014 to present the findings of the "Sovereign Debt and Financial Crises" project, which held a meeting in October 2013 for the policy community. The conference began with a summary of each of the research studies from that project.

A detailed list of these research studies may be found at: http://www.nber.org/confer/2013/SDf13/summary.html

These summaries were provided by project co-organizers Sebnem Kalemli-Özcan of University of Maryland and NBER, and Kenneth Rogoff of Harvard University and NBER. Presentations were followed by a panel discussion on sovereign debt markets featuring Guillermo Calvo of Columbia University and NBER, Vítor Gaspar of the International Monetary Fund, and project co-organizer Carmen Reinhart of Harvard University and NBER.

Organizations, Civil Society, and the Roots of Development

The NBER held a meeting on "Organizations, Civil Society, and the Roles of Development" in Cambridge on October 24–25, 2014. NBER Research Associates Naomi Lamoreaux of Yale University and John Wallis of University of Maryland organized the program. These papers were discussed:

- **Margaret Levi**, **Barry Weingast**, and **Frances Zlotnick**, Stanford University, and **Tania Melo**, University of Washington, "Opening Access, Ending the Violence Trap"
- **Victoria Johnson**, University of Michigan, and **Walter Powell**, Stanford University, "Poisedness and Propagation: Organizational Emergence and the Transformation of Civic Order in 19th-Century New York City"
- **Dan Bogart**, University of California, Irvine, "Securing the East India Monopoly: Politics, Institutional Change, and the Security of British Property Rights Revisited"
- **Qian Lu**, University of Maryland, and **John Wallis**, "Banks, Politics, and Political Parties: From Partisan Banking to Open Access in Early Massachusetts"
- **Eric Hilt**, Wellesley College and NBER, "General Incorporation and the Shift toward Open Access in the Nineteenth-Century United States"
- **Barry Weingast**, Stanford University, "From 'The Lowest State of Poverty and Barbarism' to The Opulent Commercial Society: Adam Smith's Theory of Violence and the Political Economics of Development"
- **Jacob Levy**, McGill University, "Corps Intermédiares, Civil Society, and the Art of Association"
- **Ruth Bloch**, University of California, Los Angeles, and **Naomi Lamoreaux**, Yale University and NBER, "Legal Constraints on the Development of American Non-Profit Groups, 1750–1900"
- **Richard Brooks**, Columbia University, and **Timothy Guinnane**, Yale University, "The Right to Associate and the Rights of Associations: Civil-Society Organizations in Prussia, 1794–1908"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/CSf14/summary.html

Economics of Health Insurance Exchanges

An NBER Conference on "Economics on Health Insurance Exchanges" took place in Cambridge on December 5, 2014. NBER Research Associates Leemore Dafny of Northwestern University and Jonathan Gruber of MIT organized the program. These papers were discussed:

- **Natalie Cox**, University of California, Berkeley; **Benjamin Handel**, University of California, Berkeley and NBER; **Jonathan Kolstad**, University of Pennsylvania and NBER; and **Neale Mahoney**, University of Chicago and NBER, "Messaging and the Mandate: The Impact of Advertising on Health Insurance Enrollment Through Exchanges"
- **Keith Marzilli Ericson**, Boston University and NBER, and **Amanda Starc**, University of Pennsylvania and NBER, "Measuring Consumer Valuation of Limited Provider Networks"
- **Jonathan Gruber**, and **Robin McKnight**, Wellesley College and NBER, "Controlling Health Care Costs through Limited Network Insurance Plans: Evidence from Massachusetts State Employees" (NBER Working Paper No. 20462)
- **Michael Dickstein** and **Mark Duggan**, Stanford University and NBER, and **Joseph Orsini** and **Pietro Tebaldi**, Stanford University, "The Effect of Market Size and Composition on Health Insurance Premiums: Evidence from the First Year of the ACA"
- **Jean Abraham**, **Coleman Drake**, and **Jeffrey McCullough**, University of Minnesota, and **Kosali Simon**, Indiana University and NBER, "Competing under New Rules of the Game: An Analysis of Insurer Entry and Premiums for Exchange-Based Coverage"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/HIEf14/summary.html

Means-Tested Transfer Programs

The NBER held a conference on "Means-Tested Transfer Programs" in Cambridge on December 5–6, 2014. NBER Research Associate Robert Moffitt of Johns Hopkins University organized the meeting. These papers were discussed:

- **James Ziliak**, University of Kentucky, "Temporary Assistance for Needy Families"
- **Austin Nichols**, the Urban Institute, and **Jesse Rothstein**, University of California, Berkeley and NBER, "The Earned Income Tax Credit"
- **Robert Collinson** and **Ingrid Gould Ellen**, New York University, and **Jens Ludwig**, University of Chicago and NBER, "Low Income Housing Policy"
- **Thomas Buchmueller**, University of Michigan and NBER; **John Ham**, University of Maryland; and **Lara Shore-Sheppard**, Williams College and NBER, "Medicaid"
- **Hilary Hoynes**, University of California, Berkeley and NBER, and **Diane Whitmore Schanzenbach**, Northwestern University and NBER, "U.S. Food and Nutrition Programs"
- **James Heckman**, University of Chicago and NBER, and **Sneha Elango**, **Jorge Luis García**, and **Andrés Hojman**, University of Chicago, "Early Education Programs in the U.S.: Background and Evaluations"
- **James Heckman**, University of Chicago and NBER, and **Stefano Mosso**, University of Chicago, "The Economics of Human Development and Social Mobility"
- **Mark Duggan**, Stanford University and NBER; **Melissa Kearney**, University of Maryland and NBER; and **Stephanie Rennane**, University of Maryland, "The Supplemental Security Income Program"
- **Burt Barnow**, George Washington University, and **Jeffrey Smith**, University of Michigan and NBER, "Training Programs"

Summaries of these papers may be found at: http://conference.nber.org/confer/2014/MTTPf14/summary.html

India Conference

On December 12–14, 2014, the NBER, along with India's National Council for Applied Economic Research (NCAER) and the Indian Council for Research on International Economic Relations (ICRIER), sponsored a meeting in Neemrana, India, that included NBER researchers and economists from Indian universities, research institutions, and government departments. NBER Research Associates Abhijit Banerjee of MIT and Gita Gopinath of Harvard University organized the conference jointly with Shekhar Shah of NCAER.

NBER participants, in addition to the organizers, were: Mark Aguiar of Princeton; Arnaud Costinot and Esther Duflo of MIT; Emmanuel Farhi and Martin Feldstein of Harvard University; Erica Field of Duke University; Matthew Gentzkow of the University of Chicago; Anne Krueger and John Lipsky of Johns Hopkins University; Karthik Muralidharan of the University of California, San Diego; James Poterba of MIT; Thomas Sargent of New York University; and Romain Wacziarg of the University of California, Los Angeles. Raghuram Rajan, who is on leave from the University of Chicago and the NBER while serving as the Governor of the Reserve Bank of India, also participated. The topics discussed included monetary and fiscal policy in the Indian setting, social policy and transfer programs, financial regulation, the role of education in promoting economic growth, the investment climate, and an analysis of factors that could lead to accelerating Indian economic growth in manufacturing as well as other sectors.

Measuring Entrepreneurial Businesses: Current Knowledge and Challenges

The NBER hosted a Conference on Research in Income and Wealth (CRIW) meeting in Washington on "Measuring Entrepreneurial Businesses: Current Knowledge and Challenges" on December 16 and 17, 2014. The organizers were Javier Miranda of the U.S. Bureau of the Census, and NBER Research Associates John Haltiwanger of University of Maryland, Erik Hurst of University of Chicago, and Antoinette Schoar of MIT. These papers were discussed:

- **John Haltiwanger**; **Ron Jarmin**, Bureau of the Census; **Robert Kulick**, University of Maryland, and **Javier Miranda**, "High Growth Young Firms: Contribution to Job Growth, Revenue Growth and Productivity"
- **Jorge Guzmán**, MIT, and **Scott Stern**, MIT and NBER, "Nowcasting and Placecasting Entrepreneurial Quality and Performance"
- **Christopher Goetz**, **Henry Hyatt**, **Erika McEntarfer**, and **Kristin Sandusky**, Bureau of the Census, "New Public Use Data to Study Entrepreneurship from Linked Employer-Employee Data"
- **Steven Kaplan**, University of Chicago and NBER, and **Josh Lerner**, Harvard University and NBER, "Venture Capital Data: Opportunities and Challenges"
- **Arthur Kennickell**, Federal Reserve Board, and **Myron Kwast** and **Jonathan Pogach**, Federal Deposit Insurance Corporation, "Small Businesses and Small Business Finance during the Financial Crisis and the Great Recession: New Evidence from the Survey of Consumer Finances"
- **J. David Brown**, Bureau of the Census, and **John Earle**, George Mason University, "Job Creation, Small vs. Large vs. Young, and the SBA"
- **Erik Hurst** and **Benjamin Pugsley**, Federal Reserve Bank of New York, "Wealth, Tastes, and Entrepreneurial Choice"
- **Victor Bennett**, Duke University; **Megan Lawrence**, Harvard University; and **Raffaella Sadun**, Harvard University and NBER, "Are Founder CEOs Good Managers?"
- **Johan Hombert** and **David Thesmar**, HEC Paris; **Antoinette Schoar**; and **David Sraer**, Princeton University and NBER, "Can Unemployment Insurance Change the Selection into Entrepreneurship?"
- **Rebecca Zarutskie**, Federal Reserve Board, and **Tiantian Yang**, Duke University, "How Did Young Firms Fare During the Great Recession? Evidence from the Kauffman Firm Survey"
- **Sari Pekkala Kerr**, Wellesley College, and **William Kerr**, Harvard University and NBER, "Immigrant Entrepreneurship"
- **Hugo Hopenhayn**, University of California, Los Angeles, "Theory of Entrepreneurship"

Summaries of these papers may be found at: http://conference.nber.org/confer/2014/CRIWf14/summary.html

Program and Working Group Meetings

Development Economics

The NBER's Program on Development Economics met in Cambridge on October 10–11, 2014. Program Director Duncan Thomas of Duke University, and NBER Research Associates Seema Jayachandran of Northwestern University and Benjamin Olken of MIT organized the meeting. These papers were discussed:

- **David Atkin**, University of California, Los Angeles and NBER; **Benjamin Faber**, University of California, Berkeley and NBER; and **Marco Gonzalez-Navarro**, University of Toronto, "Retail Globalization and Household Welfare: Evidence from Mexico"

- **Samuel Bazzi**, Boston University; **Arya Gaduh**, University of Arkansas; **Alexander Rothenberg**, RAND Corporation; and **Maisy Wong**, University of Pennsylvania, "Skill Transferability, Migration, and Development: Evidence from Population Resettlement in Indonesia"
- **Rebecca Dizon-Ross**, MIT, "Parents' Perceptions and Children's Education: Experimental Evidence from Malawi"
- **Adnan Khan**, London School of Economics; **Asim Khwaja**, Harvard University and NBER; and **Benjamin Olken**, "Tax Farming Redux: Experimental Evidence on Performance Pay for Tax Collectors"
- **Abhijit Banerjee**, MIT and NBER; **Xin Meng**, Australian National University; **Tommaso Porzio**, Yale University; and **Nancy Qian**, Yale University and NBER, "Aggregate Fertility and Household Savings: A General Equilibrium Analysis Using Micro Data" (NBER Working Paper No. 20050)
- **Ufuk Akcigit**, University of Pennsylvania and NBER; **Harun Alp**, University of Pennsylvania; and **Michael Peters**, Yale University, "Lack of Selection and Limits to Delegation: Firm Dynamics in Developing Countries"
- **Sandip Mitra**, Indian Statistical Institute; **Dilip Mookherjee**, Boston University and NBER; **Máximo Torero**, International Food Policy Research Institute; and **Sujata Visaria**, Hong Kong University of Science and Technology, "Asymmetric Information and Middleman Margins: An Experiment with Indian Potato Farmers"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/DEVf14/summary.html

Political Economy

The NBER Political Economy Program, directed by Alberto Alesina of Harvard University, met in Cambridge on October 17, 2014. These papers were discussed:

- **Ethan Ilzetzki**, London School of Economics, "A Positive Theory of Tax Reform"
- **Alberto Alesina** and **Francesco Passarelli**, Bocconi University, "Loss Aversion in Politics"
- **Jimmy Charité**, Columbia University, and **Raymond Fisman** and **Ilyana Kuziemko**, Columbia University and NBER, "Reference Points and Demand for Redistribution: Experimental Evidence"
- **Stelios Michalopoulos** and **David Weil**, Brown University and NBER, and **Louis Putterman**, Brown University, "The Influence of Ancestral Lifeways on Individual Economic Outcomes in Sub-Saharan Africa"
- **Leonardo Bursztyn**, University of California, Los Angeles and NBER, and **Robert Jensen**, University of Pennsylvania and NBER, "How Does Peer Pressure Affect Educational Investments?"
- **Daron Acemoglu**, MIT and NBER; **Tarek Hassan**, University of Chicago and NBER; and **Ahmed Tahoun**, London Business School, "The Power of the Street: Evidence from Egypt's Arab Spring"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/POLf14/summary.html

Economic Fluctuations and Growth

The NBER's Program on Economic Fluctuations and Growth met in Chicago on October 24, 2014. NBER Research Associates Veronica Guerrieri of the University of Chicago and Richard Rogerson of Princeton University organized the meeting. These papers were discussed:

- **Patrick Kehoe**, University of Minnesota and NBER; **Virgiliu Midrigan**, New York University and NBER; and **Elena Pastorino**, University of Minnesota, "Debt Constraints and Employment"

- **Atif Mian**, Princeton University and NBER, and **Amir Sufi**, University of Chicago and NBER, "House Price Gains and U.S. Household Spending from 2002 to 2006" (NBER Working Paper No. 20152)
- **George-Marios Angeletos**, MIT and NBER, and **Fabrice Collard** and **Harris Dellas**, University of Bern, "Quantifying Confidence"
- **Ufuk Akcigit**, University of Pennsylvania and NBER; **Harun Alp**, University of Pennsylvania; and **Michael Peters**, Yale University, "Lack of Selection and Limits to Delegation: Firm Dynamics in Developing Countries"
- **Christina Romer** and **David Romer**, University of California, Berkeley and NBER, "New Evidence on the Impact of Financial Crises in Advanced Countries"
- **Xavier Gabaix**, New York University and NBER, and **Matteo Maggiori**, Harvard University and NBER, "International Liquidity and Exchange Rate Dynamics" (NBER Working Paper No. 19854)

Summaries of these papers may be found at: http://www.nber.org/confer/2014/EFGf14/summary.html

Chinese Economy

The NBER's Working Group on the Chinese Economy met in Cambridge on October 24–25, 2014. Working Group Director Hanming Fang of the University of Pennsylvania and NBER Research Associate Shang-Jin Wei of Columbia University organized the conference. These papers were discussed:

- **Shanjun Li**, Cornell University, "Better Lucky Than Rich? Welfare Analysis of Automobile License Allocations in Beijing and Shanghai"
- **Mark Rosenzweig**, Yale University and NBER, and **Junsen Zhang**, Chinese University of Hong Kong, "Co-Residence, Life-Cycle Savings and Inter-Generational Support in Urban China" (NBER Working Paper No. 20057)
- **Shuaizhang Feng**, Shanghai University of Finance and Economics; **Yingyao Hu**, Johns Hopkins University; and **Robert Moffitt**, Johns Hopkins University and NBER, "Unemployment and Labor Force Participation in China: Long Run Trends and Short Run Dynamics"
- **Kaiji Chen**, Emory University, and **Yi Wen**, Federal Reserve Bank of St. Louis, "The Great Housing Boom of China"
- **Davin Chor**, National University of Singapore; **Kalina Manova**, Stanford University and NBER; and **Zhihong Yu**, University of Nottingham, "The Global Production Line Position of Chinese Firms"
- **Franklin Allen**, University of Pennsylvania and NBER, and **Jun Qian**, **Susan Shan**, and **Julie Zhu**, Shanghai Jiao Tong University, "The Best Performing Economy with the Worst Performing Market: Explaining the Poor Performance of the Chinese Stock Market"
- **Bei Qin**, University of Hong Kong; **David Strömberg**, Stockholm University; and **Yanhui Wu**, University of Southern California, "Media Bias in Autocracies: Evidence from China"
- **Nancy Chau**, Cornell University; **Yu Qin**, National University of Singapore; and **Weiwen Zhang**, Zhejiang University, "Networked Leaders in the Shadow of the Market — A Chinese Experiment in Allocating Land Conversion Rights"
- **Davide Cantoni**, University of Munich; **Yuyu Chen**, Peking University; **David Yang**, Stanford University; **Noam Yuchtman**, University of California, Berkeley and NBER; and **Y. Jane Zhang**, Hong Kong University of Science and Technology, "Curriculum and Ideology" (NBER Working Paper No. 20112)
- **Zhibo Tan**, Fudan University; **Shang-Jin Wei**, Columbia University and NBER; and **Xiaobo Zhang**, Peking University, "Deadly Discrimination: Implications of 'Missing Girls' for Workplace Safety"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/CEf14/summary.html

Public Economics

The NBER's Program on Public Economics met in Cambridge on October 30, 2014. Program Co-director Amy Finkelstein of MIT and Research Associate Ilyana Kuziemko of Columbia University chose these papers to discuss:

- **Nathaniel Hendren**, Harvard University and NBER, "The Inequality Deflator: Interpersonal Comparisons without a Social Welfare Function" (NBER Working Paper No. 20351)
- **Benjamin Lockwood**, Harvard University, and **Matthew Weinzierl**, Harvard University and NBER, "Positive and Normative Judgments Implicit in U.S. Tax Policy, and the Costs of Unequal Growth and Recessions"
- **Adnan Khan**, London School of Economics; **Asim I. Khwaja**, Harvard University and NBER; and **Benjamin Olken**, MIT and NBER, "Tax Farming Redux: Experimental Evidence on Performance Pay for Tax Collectors"
- **Mikhail Golosov**, Princeton University and NBER; **Aleh Tsyvinski**, Yale University and NBER; and **Nicolas Werquin**, Yale University, "A Variational Approach to the Analysis of Tax Systems"
- **Marika Cabral** and **Michael Geruso**, University of Texas, Austin and NBER, and **Neale Mahoney**, University of Chicago and NBER, "Does Privatized Health Insurance Benefit Patients or Producers? Evidence from Medicare Advantage" (NBER Working Paper No. 20470)
- **Bhaven Sampat**, Columbia University and NBER, and **Heidi Williams**, MIT and NBER, "How Do Patents Affect Follow-On Innovation? Evidence from the Human Genome"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/PEf14/summary.html

International Finance and Macroeconomics

The NBER's Program on International Finance and Macroeconomics met in Cambridge on October 31, 2014. Research Associates Charles Engel of the University of Wisconsin, Madison and Emmanuel Farhi of Harvard University chose these papers to discuss:

- **Seunghoon Na**, Columbia University; **Stephanie Schmitt-Grohé** and **Martin Uribe**, Columbia University and NBER; and **Vivian Yue**, Emory University, "A Model of the Twin Ds: Optimal Default and Devaluation" (NBER Working Paper No. 20314)
- **Cristina Arellano**, Federal Reserve Bank of Minneapolis and NBER, and **Yan Bai**, University of Rochester and NBER, "Linkages Across Sovereign Debt Markets" (NBER Working Paper No. 19548)
- **Marcos Chamon**, International Monetary Fund; **Julian Schumacher**, Humboldt University of Berlin; and **Christoph Trebesch**, University of Munich, "Foreign Law Bonds: Can They Reduce Sovereign Borrowing Costs?"
- **Varadarajan Chari** and **Patrick Kehoe**, University of Minnesota and NBER, and **Alessandro Dovis**, Pennsylvania State University, "On the Optimality of Financial Repression"
- **Anton Korinek**, Johns Hopkins University and NBER, "International Spillovers and Guidelines for Policy Cooperation"
- **Luca Fornaro**, Universitat Pompeu Fabra, "International Debt Deleveraging"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/IFMf14/summary.html

Organizational Economics

The NBER's Working Group on Organizational Economics, directed by Robert Gibbons of MIT, met at Stanford University on October 31–November 1, 2014. These papers were discussed:

- **Benjamin Hermalin**, University of California, Berkeley, "At the Helm, Kirk or Spock? The Pros and Cons of Charismatic Leadership"
- **Rocco Macchiavello**, University of Warwick, and **Ameet Morjaria**, Harvard University, "Competition and Relational Contracts: Evidence from Rwanda's Coffee Mills"
- **Mark Granovetter**, Stanford University, "The Impact of Mental Constructs on Economic Action: Norms, Values, Moral Economy, Culture, Schemata, and Institutional Logics"
- **Philippe Aghion** and **Raffaella Sadun**, Harvard University and NBER; **Nicholas Bloom**, Stanford University and NBER; and **John Van Reenen**, London School of Economics and NBER, "Never Waste a Good Crisis? Growth and Decentralization in the Great Recession"
- **Steven Blader** and **Claudine Gartenberg**, New York University, and **Andrea Prat**, Columbia University, "The Contingent Effect of Management Practices"
- **Timo Ehrig** and **Jürgen Jost**, Max Planck Institute for Mathematics in the Sciences, and **Massimo Warglien**, Università Ca' Foscari, "A Formal Framework for Strategic Representations and Conceptual Reorganization"
- **Guido Friebel**, **Miriam Krüger**, and **Nick Zubanov**, Goethe University Frankfurt, and **Matthias Heinz**, University of Cologne, "Team Incentives and Performance: Evidence from a Retail Chain"
- **Daniel Barron** and **Michael Powell**, Northwestern University, "Policy Commitments in Relational Contracts"
- **Marian Moszoro**, University of California, Berkeley; **Pablo Spiller**, University of California, Berkeley and NBER; and **Sebastian Stolorz**, George Mason University, "Rigidity of Public Contracts"
- **Laurent Frésard**, University of Maryland; **Gerard Hoberg**, University of Southern California; and **Gordon Phillips**, University of Southern California and NBER, "The Incentives for Vertical Acquisitions and Integration"
- **Wouter Dessein**, Columbia University, and **Tano Santos**, Columbia University and NBER, "Managerial Style and Attention"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/OEf14/summary.html

Labor Studies

The NBER's Program on Labor Studies, directed by David Card of the University of California, Berkeley, met in Cambridge on November 7, 2014. These papers were discussed:

- **Victor Lavy**, University of Warwick and NBER; **Avraham Ebenstein**, Hebrew University of Jerusalem; and **Sefi Roth**, Royal Holloway, University of London, "The Long Run Human Capital and Economic Consequences of High-Stakes Examinations"
- **John Haltiwanger**, University of Maryland and NBER, and **Henry Hyatt** and **Erika McEntarfer**, Bureau of the Census, "Cyclical Reallocation of Workers across Employers by Firm Size and Firm Wage"
- **Nathaniel Hilger**, Brown University, "What Do Model Minorities Teach Us About Overcoming Disadvantage? The Case of Asian-Americans"
- **Christian Dustmann**, University College London, and **Rasmus Landersø**, Aarhus University, "The Boys are Back in Town: The Effects of Child's Gender on Youth Crime"

- **Huailu Li**, Fudan University; **Kevin Lang**, Boston University and NBER; and **Kaiwen Leong**, Nanyang Technological University, "Does Competition Eliminate Discrimination? Evidence from the Commercial Sex Market in Singapore"
- **David Cesarini**, New York University; **Erik Lindqvist**, Stockholm School of Economics; **Matthew Notowidigdo**, Northwestern University and NBER; and **Robert Östling**, Stockholm University, "The Effect of Wealth on Individual and Household Labor Supply: Evidence from Swedish Lotteries"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/LSf14/summary.html

Monetary Economics

The NBER's Monetary Economics Program met in Cambridge on November 7, 2014. NBER Research Associates Atif Mian of Princeton University and Jón Steinsson of Columbia University chose these papers to discuss:

- **Pierpaolo Benigno**, Libera Università Internazionale degli Studi Sociali Guido Carli; **Gauti Eggertsson**, Brown University and NBER; and **Federica Romei**, European University Institute, "Dynamic Debt Deleveraging and Optimal Monetary Policy" (NBER Working Paper No. 20556)
- **Neil Mehrotra**, Brown University, and **Dmitriy Sergeyev**, Bocconi University, "Financial Shocks and Job Flows"
- **Antonio Falato** and **Nellie Liang**, Federal Reserve Board, "Do Creditor Rights Increase Employment Risk? Evidence from Loan Covenants"
- **Mark Bils**, University of Rochester and NBER; **Peter Klenow**, Stanford University and NBER; and **Benjamin Malin**, Federal Reserve Bank of Minneapolis, "Resurrecting the Role of the Product Market Wedge in Recessions" (NBER Working Paper No. 20555)
- **Marco Di Maggio**, Columbia University; **Amir Kermani**, University of California, Berkeley; and **Rodney Ramcharan**, Federal Reserve Board, "Monetary Policy Pass-Through: Household Consumption and Voluntary Deleveraging"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/MEf14/summary.html

Economics of Education

The NBER's Program on Education, directed by Caroline Hoxby of Stanford University, met in Washington on November 13–14, 2014. These papers were discussed:

- **Atila Abdulkadiroğlu**, Duke University; **Joshua Angrist** and **Parag Pathak**, MIT and NBER; and **Peter Hull**, MIT, "Charters without Lotteries: Testing Takeovers in New Orleans and Boston"
- **Daniel Hungerman**, University of Notre Dame and NBER, and **Kevin Rinz**, University of Notre Dame, "Where Does School-Choice Funding Go? How Large-Scale Choice Programs Affect Private-School Revenue, Enrollment, and Prices"
- **Joseph Altonji**, Yale University and NBER, and **Richard Mansfield**, Cornell University, "Group-Average Observables as Controls for Sorting on Unobservables When Estimating Group Treatment Effects: the Case of School and Neighborhood Effects"
- **Harold Cuffe**, Victoria University of Wellington; **Glen Waddell**, University of Oregon; and **Wesley Bignell,** University of Washington, "Too Busy for School? The Effect of Athletic Participation on Absenteeism"
- **Peter Bergman**, Columbia University, "Educational Attainment and School Desegregation: Evidence from Randomized Lotteries"
- **Leonardo Bursztyn**, University of California, Los Angeles and NBER, and **Robert Jensen**, University of Pennsylvania and NBER, "How Does Peer Pressure Affect Educational Investments?"

- **David Autor**, MIT and NBER; **David Figlio**, Northwestern University and NBER; **Krzysztof Karbownik**, Northwestern University; **Jeffrey Roth**, University of Florida; and **Melanie Wasserman**, MIT, "The Fragile-Y Effect: Family Environment and the Gender Gap in Behavioral and Educational Outcomes"
- **Richard Murphy**, University of Texas, Austin, and **Felix Weinhardt**, Humboldt University of Berlin, "Top of the Class: The Importance of Ordinal Rank"
- **Esteban Aucejo**, London School of Economics, and **Teresa Foy Romano**, Duke University, "Assessing the Effect of School Days and Absences on Test Score Performance"
- **Nathaniel Hilger**, Brown University, "Intergenerational Educational Mobility"
- **Martin West** and **Christopher Gabrieli**, Harvard University; **Matthew Kraft**, Brown University; **Amy Finn**, **Rebecca Martin** and **John Gabrieli**, MIT; and **Angela Duckworth**, University of Pennsylvania, "Promise and Paradox: Measuring Students' Non-cognitive Skills and the Impact of Schooling"
- **Eric Bettinger**, Stanford University and NBER; **Michael Kremer**, Harvard University and NBER; **Maurice Kugler**, United Nations Development Programme; **Carlos Medina**, Banco de la República de Colombia; **Christian Posso**, University of North Carolina; and **Juan Saavedra**, University of Southern California, "Educational, Labor Market, and Welfare Impacts of Scholarships for Private Secondary School: Evidence from Colombia"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/EDf14/summary.html

Corporate Finance

The NBER's Program on Corporate Finance met in Cambridge on November 14, 2014. NBER Research Associates Nittai Bergman and Antoinette Schoar, both of MIT, organized the meeting. These papers were discussed:

- **Efraim Benmelech**, Northwestern University and NBER, and **Ralf Meisenzahl** and **Rodney Ramcharan**, Federal Reserve Board, "The Real Effects of Liquidity during the Financial Crisis"
- **Puriya Abbassi**, Deutsche Bundesbank; **Rajkamal Iyer**, MIT; and **José-Luis Peydró** and **Francesc Tous**, Universitat Pompeu Fabra, "Securities' Trading by Banks: Micro-Evidence"
- **Anil Kashyap**, University of Chicago and NBER; **Dimitrios Tsomocos**, University of Oxford; and **Alexandros Vardoulakis**, Federal Reserve Board, "How Does Macroprudential Regulation Change Bank Credit Supply?" (NBER Working Paper No. 20165)
- **Daniel Paravisini** and **Veronica Rappoport**, London School of Economics, and **Philipp Schnabl**, New York University and NBER, "Comparative Advantage and Specialization in Bank Lending"
- **Martin Jacob**, WHU – Otto Beisheim School of Management; **Roni Michaely**, Cornell University; and **Annette Alstadsæter**, University of Oslo, "Taxation and Dividend Policy: The Muting Effect of Diverse Ownership Structure"
- **Jonathan Berk**, Stanford University and NBER; **Jules van Binsbergen**, University of Pennsylvania and NBER; and **Binying Liu**, Northwestern University, "Matching Capital and Labor" (NBER Working Paper No. 20138)
- **Alexander Dyck**, University of Toronto; **Adair Morse**, University of California, Berkeley and NBER; and **Luigi Zingales**, University of Chicago and NBER, "How Pervasive is Corporate Fraud"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/CFf14/summary.html

Behavioral Finance

The Behavioral Economics Working Group held a meeting on Behavioral Finance in Cambridge on November 15, 2014, organized by NBER Research Associates Nicholas Barberis of Yale University and Kent Daniel of Columbia University. These papers were discussed:

- **Daniel Chen**, Eidgenössische Technische Hochschule Zürich, and **Tobias Moskowitz** and **Kelly Shue**, University of Chicago and NBER, "Decision-Making under the Gambler's Fallacy: Evidence from Asylum Judges, Loan Officers, and Baseball Umpires"
- **Tom Chang** and **David Solomon**, University of Southern California; **Samuel Hartzmark**, University of Chicago; and **Eugene Soltes**, Harvard University, "Being Surprised by the Unsurprising: Earnings Seasonality and Stock Returns"
- **Jon Kleinberg** and **Chentao Tan**, Cornell University; **Sendhil Mullainathan**, Harvard University and NBER; and **Thomas Zimmermann**, Harvard University, "Inductive Testing: Theory and an Application to the Disposition Effect"
- **Francesco D'Acunto**, University of California, Berkeley; **Marcel Prokopczuk**, Leibniz University of Hannover; and **Michael Weber**, University of Chicago, "Distrust in Finance Lingers: Jewish Persecution and Households' Investments"
- **Yihui Pan**, University of Utah; **Stephan Siegel**, University of Washington; and **Tracy Yue Wang**, University of Minnesota, "The Cultural Origin of Preferences: CEO Cultural Heritage and Corporate Policies"
- **Chunxin Jia** and **Yaping Wang**, Peking University, and **Wei Xiong**, Princeton University and NBER, "Social Trust and Differential Reactions of Local and Foreign Investors to Public News"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/BEf14/summary.html

Household Finance

The NBER's Working Group on Household Finance held a conference on "Research Findings and Implications for Policy" in Washington on November 21, 2014. Directors Brigitte Madrian of Harvard University and Stephen Zeldes of Columbia University chose these papers to discuss:

- **Stefania Albanesi**, Federal Reserve Bank of New York, and **Jaromir Nosal**, Columbia University, "Insolvency After the 2005 Bankruptcy Reform"
- **Justine Hastings**, Brown University and NBER; **Christopher Neilson**, New York University; and **Seth Zimmerman**, Princeton University, "Student Loans, College Choice, and Information on the Returns to Higher Education"
- **Shawn Cole**, Harvard University and NBER; **Benjamin Iverson**, Northwestern University; and **Peter Tufano**, University of Oxford and NBER, "Can Gambling Increase Savings? Empirical Evidence on Prize-linked Savings Accounts"
- **Joanne Hsu**, Federal Reserve Board; **David Matsa**, Northwestern University and NBER; and **Brian Melzer**, Northwestern University, "Positive Externalities of Social Insurance: Unemployment Insurance and Consumer Credit" (NBER Working Paper No. 20353)
- **Benjamin Keys**, University of Chicago; **Tomasz Piskorski**, Columbia University; **Amit Seru**, University of Chicago and NBER; and **Vincent Yao**, Fannie Mae, "Mortgage Rates, Household Balance Sheets, and the Real Economy" (NBER Working Paper No. 20651)
- **Miriam Bruhn**, **Arianna Legovini**, **Rogelio Marchetti**, and **Bilal Zia**, the World Bank, and **Luciana de Souza Leão**, Columbia University, "The Impact of High School Financial Education: Evidence from a Large-Scale Evaluation in Brazil"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/HFDCf14/summary.html

Asset Pricing

The NBER's Program on Asset Pricing met at Stanford University on November 20–21, 2014. NBER Research Associates Nicolae Gârleanu and Martin Lettau, both of University of California, Berkeley, chose these papers to discuss:

- **Rhys Bidder**, Federal Reserve Bank of San Francisco, and **Ian Dew-Becker**, Northwestern University, "Long-Run Risk is the Worst-Case Scenario"
- **Marianne Andries**, University of Toulouse; **Thomas Eisenbach**, Federal Reserve Bank of New York; and **Martin Schmalz**, University of Michigan, "Asset Pricing with Horizon-Dependent Risk Aversion"
- **Dongho Song**, Boston College, "Bond Market Exposures to Macroeconomic and Monetary Policy Risks"
- **Itamar Drechsler**, New York University and NBER, and **Qingyi Drechsler**, Wharton Research Data Services, "The Shorting Premium and Asset Pricing Anomalies" (NBER Working Paper No. 20282)
- **Christopher Culp**, Johns Hopkins University; **Yoshio Nozawa**, Federal Reserve Board; and **Pietro Veronesi**, University of Chicago and NBER, "The Empirical Merton Model"
- **Alan Moreira**, Yale University, and **Alexi Savov**, New York University and NBER, "The Macroeconomics of Shadow Banking" (NBER Working Paper No. 20335)

Summaries of these papers may be found at: http://www.nber.org/confer/2014/APf14/summary.html

International Trade and Investment

The NBER's Program on International Trade and Investment met at Stanford University on December 5–6, 2014. NBER Research Associate Gordon Hanson of University of California, San Diego organized the meeting. These papers were discussed:

- **Treb Allen**, Northwestern University and NBER; **Costas Arkolakis**, Yale University and NBER; and **Yuta Takahashi**, Northwestern University, "Universal Gravity"
- **Colin Hottman**, Columbia University; **Stephen Redding**, Princeton University and NBER; and **David Weinstein**, Columbia University and NBER, "What is Firm Heterogeneity in Trade Models? The Role of Quality, Scope, Markups, and Cost" (NBER Working Paper No. 20436)
- **Jonathan Eaton**, Brown University and NBER; **Samuel Kortum**, Yale University and NBER; and **Francis Kramarz**, CREST, "Firm-to-Firm Trade: Imports, Exports, and the Labor Market"
- **Andrew Bernard** and **Andreas Moxnes**, Dartmouth College and NBER, and **Yukiko Saito**, Research Institute of Economy, Trade and Industry, "Production Networks, Geography and Firm Performance"
- **Lee Branstetter**, Carnegie Mellon University and NBER, and **Matej Drev**, Georgia Institute of Technology, "Who's Your Daddy? Foreign Investor Origin, Multi-Product Firms, and the Benefit of Foreign Investment"
- **Donald Davis**, Columbia University and NBER; **Jonathan Dingel**, University of Chicago; **Joan Monras**, Sciences Po; and **Eduardo Morales**, Princeton University and NBER, "Spatial and Social Frictions in the City: Evidence from Yelp"
- **Rafael Dix-Carneiro**, Duke University, and **Brian Kovak**, Carnegie Mellon University and NBER, "Trade Reform and Regional Dynamics: Evidence from 25 Years of Brazilian Matched Employer-Employee Data"
- **James Markusen**, University of Colorado, Boulder and NBER, "An Alternative Base Case for Modeling Trade and the Environment"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/ITIf14/summary.html

Entrepreneurship

The NBER's Working Group on Entrepreneurship met in Cambridge on December 5, 2014. Working Group Director Antoinette Schoar of MIT and NBER Research Associate Josh Lerner of Harvard University chose these papers to discuss:

- **Erin Scott**, National University of Singapore; **Pian Shu**, Harvard University; and **Roman Lubynsky**, MIT, "Evaluating Early-Stage Ideas: Evidence from Venture Mentoring"
- **Deepak Hegde**, New York University, and **Justin Tumlinson**, University of Munich, "Unobserved Ability and Entrepreneurship"
- **Juanita Gonzalez-Uribe**, London School of Economics, and **Michael Leatherbee**, Pontificia Universidad Católica de Chile, "Business Accelerators: Evidence from Start-up Chile"
- **Manuel Adelino** and **Song Ma**, Duke University, and **David Robinson**, Duke University and NBER, "Firm Age, Investment Opportunities, and Job Creation" (NBER Working Paper No. 19845)
- **Annamaria Conti**, Georgia Institute of Technology, "Evaluating Government R&D Grants to Startups: The Case of a Small Open Economy"
- **Yael Hochberg**, Rice University and NBER; **Carlos Serrano**, Universitat Pompeu Fabra and NBER; and **Rosemarie Ziedonis**, University of Oregon, "Patent Collateral, Investor Commitment, and the Market for Venture Lending" (NBER Working Paper No. 20587)

Summaries of these papers may be found at: http://www.nber.org/confer/2014/ENTf14/summary.html

Market Microstructure

The NBER's Working Group on Market Microstructure held a meeting, supported by the NASDAQ-OMX Foundation, in Cambridge on December 12, 2014. Tarun Chordia of Emory University; Amit Goyal of the University of Lausanne; Joel Hasbrouck of New York University; Bruce Lehmann of the University of California, San Diego, and NBER; Gideon Saar of Cornell University; and Avanidhar Subrahmanyam of the University of California, Los Angeles, organized the program. These papers were discussed:

- **Mariassunta Giannetti** and **Bige Kahraman**, Stockholm School of Economics, "Who Trades Against Mispricing?"
- **Paolo Pasquariello**, University of Michigan, "Government Intervention and Arbitrage"
- **Salman Arif** and **Azi Ben-Rephael**, Indiana University, and **Charles Lee**, Stanford University, "Do Short-Sellers Profit from Mutual Funds? Evidence from Daily Trades"
- **Zhuo Zhong**, University of Melbourne, "The Risk Sharing Benefit versus the Collateral Cost: The Formation of the Inter-Dealer Network in Over-the-Counter Trading"
- **Albert Kyle** and **Yajun Wang**, University of Maryland, and **Anna Obizhaeva,** New Economic School, "A Market Microstructure Theory of the Term Structure of Asset Returns"
- **Yakov Amihud**, New York University, "The Pricing of the Illiquidity Factor's Systematic Risk"

Summaries of these papers may be found at: http://www.nber.org/confer/2014/MMf14/summary.html

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Human Capital in History: The American Record

Edited by Leah Platt Boustan, Carola Frydman, and Robert A. Margo
Cloth: $110.00
An NBER Conference Report

America's expansion to one of the richest nations in the world was partly due to a steady increase in labor productivity, which in turn depended on the invention and deployment of new technologies and on investments in both human and physical capital. The accumulation of human capital — the knowledge and skill of workers — has featured prominently in American economic leadership over the past two centuries.

Human Capital in History brings together contributions from leading researchers in economic history, labor economics, the economics of education, and related fields. Building on Claudia Goldin's landmark research on the labor history of the United States, the authors consider the roles of education and technology in contributing to American economic growth and well-being, the experience of women in the workforce, and how trends in marriage and family affected broader economic outcomes. The volume provides important new insights on the forces that affect the accumulation of human capital.

How the Financial Crisis and Great Recession Affected Higher Education

Edited by Jeffrey R. Brown and Caroline M. Hoxby
Cloth $110.00
An NBER Conference Report

The recent financial crisis had a profound effect on both public and private universities, which faced shrinking endowments, declining charitable contributions, and reductions in government support. Universities responded to these stresses in different ways. This volume presents new evidence on the nature of these responses, and on how the incentives and constraints facing different institutions affected their behavior.

The studies in this volume explore how various practices at institutions of higher education, such as the drawdown of endowment resources, the awarding of financial aid, and spending on research, responded to the financial crisis. The studies examine universities as economic organizations that operate in a complex institutional and financial environment. The authors examine the role of endowments in university finances and the interaction of spending policies, asset allocation strategies, and investment opportunities. They demonstrate that universities' behavior can be modeled using economic principles.

Measuring Wealth and Financial Intermediation and Their Links to the Real Economy

Edited by Charles R. Hulten and Marshall B. Reinsdorf
Cloth $130.00
NBER Studies in Income and Wealth, Volume 73

More than half a decade has passed since the bursting of the housing bubble and the collapse of Lehman Brothers. In retrospect, what is surprising is that these events and their consequences came as such a surprise. What was it that prevented most of the world from recognizing the impending crisis and, looking ahead, what needs to be done to prevent a recurrence?

Measuring Wealth and Financial Intermediation and Their Links to the Real Economy identifies measurement problems associated with the financial crisis and improvements in measurement that may prevent future crises, taking account of the dynamism of the financial marketplace in which measures that once worked well can become misleading. In addition to advances in measuring financial activity, the contributors also investigate the effects of the crisis on households and nonfinancial businesses. They show that households' experiences varied greatly and some even experienced gains in wealth, while nonfinancial businesses' lack of access to credit in the recession may have been a more important factor than the effects of policies stimulating demand.

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