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Program Report

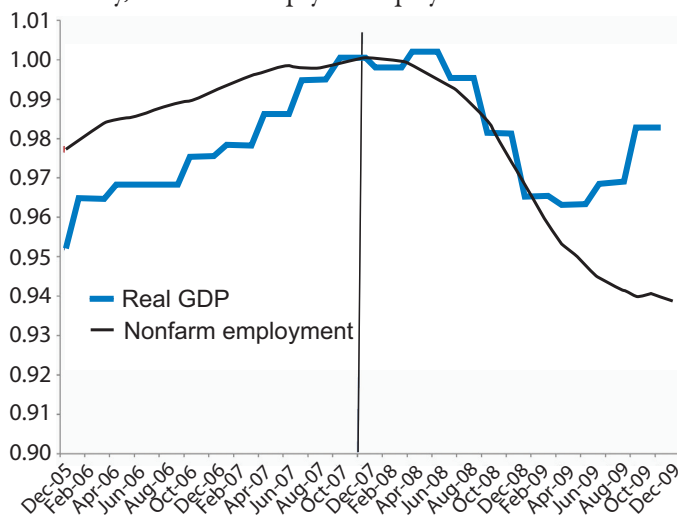
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Economic Fluctuations and Growth

Robert E. Hall*

The Economic Fluctuations and Growth (EF&G) Program goes back to the beginning of Martin Feldstein's presidency of the NBER, although originally it was simply called the Economic Fluctuations Program. It has been my honor to serve as its director from its founding, 32 years ago. To the public, the Program's most conspicuous activity has been to maintain the NBER's chronology of the U.S. business cycle, generally accepted as the standard for identifying the beginning and ending of each recession. As I write, many eyes are on the program's Business Cycle Dating Committee, which I also chair, as evidence grows that the recession that began in December 2007 may have come to an end recently or is about to come to an end. The following graph shows the two main indicators the committee considers in deciding on the dates of turning points in economic activity, real GDP and payroll employment:



*Hall directs the NBER's Program on Economic Fluctuations and Growth and is Chairman of the NBER's Business Cycle Dating Committee. He is 2010 President of the American Economic Association, and is the Robert and Carole McNeil Professor of Economics and Hoover Senior Fellow at Stanford University. In this article, the numbers in parentheses refer to NBER Working Papers. For other papers, titles are included, and the latest versions can be found by googling the title.

NBER Reporter

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Both measures are stated as indexes that reached 1.00 in December 2007, the month determined to be the peak of the business cycle by the committee on November 28, 2008. That month was the exact peak of employment, but real GDP reached a slightly higher value in the second quarter of 2008. Both measures plunged in late 2008 as the financial crisis took hold. Real GDP began to grow in the summer of 2009 but employment continued to decline. The percentage drop in employment in the current recession was the largest since the government began the collection of the data in 1939, although not nearly as large as the decline in the Great Depression in 1929 to 1933, according to annual data from earlier sources. The huge difference between the recent behavior of output and employment reflects the unprecedented growth of productivity in 2009. In determining the date for the trough in economic activity, the committee will be deciding how to weigh output and employment in its definition of economic activity.

EF&G is the largest of the Bureau's research programs, with 149 Research Associates and 45 Faculty Research Fellows (as of February 2010). At recent Program Meetings, the papers have included two on the effects of the small probability of large disasters: Francois Gourio, "Disasters Risk and Business Cycles" (15399); and Robert Barro, Emi Nakamura, Jon Steinsson, "Crises and Recoveries in an Empirical Model of Consumption Disasters." Housing economics has played a major role in the meetings, too, with: Veronica Guerrieri, Daniel Hartley, and Erik Hurst, "Endogenous Gentrification and Housing Price Dynamics"; Jack Favilukis, Sydney Ludvigson, and Stijn Van Nieuwerburgh, "The Macroeconomic Effects of Housing Wealth, Housing Finance, and Limited Risk-Sharing in General Equilibrium"; and James Kahn, "What Drives Housing Prices?" Volatility in financial markets has an important new role in macroeconomics, as seen in YiLi Chien, Harold Cole, and Hanno Lustig, "Is the Volatility of the Market Price of Risk due to Intermittent Portfolio Re-Balancing?" (15382) and Ricardo Lagos, Guillaume Rocheteau, and Pierre-Olivier Weill, "Crises and Liquidity in Over-the-Counter Markets" (15414). The novel role of fiscal policy in today's economy was the subject of Christopher Ercog and Jesper Linde, "Is There a Fiscal Free Lunch in a Liquidity Trap?"

Most of the EF&G Program's activities take place in its nine research groups. Each group has two or three leaders, who determine the membership of the group and its methods of operation, timing of its meetings, and content of its programs. Most groups meet at the NBER Summer Institute in July and many also meet during the academic year.

Impulse and Propagation Mechanisms Group – Lawrence Christiano and Martin Eichenbaum, Leaders

Recently, this group has focused on an important area of research stimulated by the financial crisis of 2008: understanding the role of financial market frictions. Gadi Barlevy in "A Leverage-Based Model of Speculative Bubbles," George-Marios Angeletos and Jennifer La'O (14982), Zheng Liu, Pengfei Wang, and Tao Zha in "Asset Priced Channels and Macroeconomic Fluctuations," and Luca Dedola and Giovanni Lombardo in "Financial Friction, Financial Integration and the International Propagation of Shocks" all study models in which informational frictions give rise to important capital market frictions. The first two papers are theoretical in nature, exploring new ideas and frameworks. The others are more quantitative in nature, exploring the significance of different financial market frictions in dynamic stochastic general equilibrium (DSGE) models.

Motivated by recent events as well, other researchers in this group are exploring the efficacy of different policies in economies where a zero bound on the nominal interest rate is binding, and in economies in which the spread on interest rates to borrowers and lenders experiences large changes. In "Conventional and Unconventional Monetary Policy," Vasco Cúrdia and Michael Woodford extend the basic New Keynesian model of the monetary transmission mechanism to allow for a spread between the interest rate available to savers and borrowers. This spread can vary for either exogenous or endogenous reasons. Woodford discusses policy rules that

provide good approximations to optimal policy in such environments. In "Where Should Liquidity be Injected during a Financial Crisis?" Ricardo Reis formalizes the notion of a liquidity shortage and then studies the tactical aspects of monetary policy when such a shortage arises.

Lawrence Christiano, Martin Eichenbaum, and Sergio Rebelo (15394) analyze the circumstances under which fiscal policy has a large and socially beneficial effect. Standard macro models imply that the effect of fiscal policy on output is positive but relatively small. However, these effects can be very large if the zero-bound constraint on the nominal interest rate is binding. A key determinant of the size of the multiplier is the state of the world in which new government spending comes on line. If it comes on line in future periods when the nominal interest rate is zero, then there is a large effect on current output. If it comes on line in future periods where the nominal interest rate is positive, then the current effect on government spending is smaller. This finding supports the view that, for fiscal policy to be effective, government spending must come online in a timely manner.

Capital Markets and the Economy – Janice Eberly and Deborah Lucas, Leaders

The capital markets group studies interactions between the real and financial economy. The recent financial crisis has sparked new and interesting research on the sources of the crisis, how such a crisis might be prevented or foreseen, the potential impact on the macroeconomy, and policy responses.

The group has discussed several papers related to market dynamics that are similar to bank runs, but occur outside the banking sector. Julio Rotemberg (14222) presented a novel model of how payments clearing among interconnected agents are settled, and how the amount of liquidity needed to clear the payments depends on the payments system among the agents.

Two additional papers by Zhiguo He and Wei Xiong (15482) and by Viral Acharya, Douglas Gale, and Tanju Yorulmazer (15674) consider the effect of financing longer-term investments by rolling over short-term assets, as in many financial institutions. The papers consider the risks associated with this maturity transformation and the roles played by volatility, liquidity, and maturity, as well the potential role of financial regulation in mitigating these risks.

The group discussed two related empirical papers. The first, "Banking Crises and Crisis Dating," by John Boyd, Gianni De Nicolò, and Elena Loukoianova, carefully considers the roots of measured banking crises and finds that the crises arise from underlying systemic bank shocks. Since the shocks pre-date the crises, using the shocks to date the origins of the crisis changes one's view of the dynamics and causes of financial crises. A second paper, by Manuel Adelino, Kristopher Gerardi, and Paul Willen (15159), looks at data during the financial crisis, starting in 2007, and shows that because of re-default risk and self-cures (mortgages becoming current again), renegotiating delinquent mortgages is not very attractive to investors. Hence, payment-reducing loan modifications have been uncommon in both securitized and non-securitized pools of mortgages.

Finally, this group considered several theoretical treatments of the recent financial crisis. In "Securitization, Transparency, and Liquidity," Marco Pagano and Paolo Volpin argue that there are cases where the release of coarse information is preferred by bond issuers enhancing primary market liquidity, at the cost of secondary market liquidity. In "Bursting Bubbles: Consequences and Cures," Narayana Kocherlakota, now the President of the Federal Reserve Bank of Minneapolis, discussed a framework in which asset market bubbles can arise, because the asset can be used as collateral for borrowing. He shows that the consequences of bursting the bubble can be dramatic and persistent in the real and financial economy.

The Labor Market in Macroeconomics – Richard Rogerson, Robert Shimer, and Randall Wright, Leaders

The labor market is central to many issues in macroeconomics, including business cycles, unemployment, inequality, and growth. This group considers models of the labor market, data analysis, and the use of models to carry out substantive policy analysis.

Modern models of the labor market stress the underlying dynamics in job and worker flows. High-quality data on these flows is central to developing better models of these processes and assessing their consequences for a variety of substantive and policy issues. Therefore, this group has always emphasized the analysis of new datasets that can shed additional light on the empirical properties of these flows. A recent example of this is the work of Steven Davis, Jason Faberman, and John Haltiwanger, “The Establishment-Level Behavior of Vacancies and Hiring.” Recent models of labor market flows stress the role of vacancy creation in understanding labor market outcomes, and this is the first paper to provide systematic evidence on the relationship between vacancy posting and hiring. The paper uses data from the recent JOLTS dataset and the facts that it presents will play a key role in guiding the development and calibration of models of labor market dynamics.

Understanding the nature and causes of labor market fluctuations associated with business cycles remains a key issue in economics, and research on this issue has always featured prominently in the group’s meetings. A recent example is my paper, “Reconciling Cyclical Movements in the Marginal Value of Time and the Marginal Product of Labor,” which shows that a standard macroeconomic model appended to capture labor market frictions, in the spirit of work pioneered by Diamond, Mortensen, and Pissarides, can reconcile observed labor market fluctuations in a framework where all bilateral gains from trade are realized. It does not follow that fluctuations are optimal from

the perspective of society — high unemployment is socially inefficient.

Another long-standing issue in the analysis of aggregate labor market outcomes concerns the elasticity of aggregate labor supply, and in particular, the apparent inconsistency between low labor-supply elasticities that are estimated from micro data and the much larger values implicit in many aggregate models. The elasticity of aggregate labor supply has important implications both for the propagation of shocks in business cycle models and for assessing the implications of fiscal policy instruments, such as tax and transfer programs. Work by Richard Rogerson and Johanna Wallenius (13017) argues that there is no inconsistency. They present a model of life-cycle labor supply in which standard procedures used to infer elasticities using micro data would find a small elasticity even though the aggregate elasticity is large. Central to this finding is the fact that individuals adjust their lifetime labor supply along two margins: how much to work while employed, and what fraction of their lives to spend in employment. An important implication of the analysis is that tax and transfer policies generate large responses in aggregate hours worked.

Forecasting and Empirical Methods in Macroeconomics and Finance – Mark W. Watson and Kenneth D. West, Leaders

The forecasting and methods group focuses on the development and assessment of econometric methods for use in empirical macroeconomics and finance, placing special emphasis on problems of prediction. It meets jointly with a group on forecasting under the Committee on Econometrics and Mathematical Economics umbrella, with support from the National Science Foundation.

Group meetings tend to involve two types of papers: one type with models or forecasts of one or more variables, using novel or technically advanced methods; a second type in which the authors develop and evaluate a new methodology for estimation, inference, or prediction. Many of

the papers that are presented fit in both categories.

In the first category, Jens H. E. Christensen, Francis X. Diebold, and Glenn D. Rudebusch (13611) study the term structure of nominal government debt, showing that a combination of a standard parametric specification and an arbitrage-free specification leads to improvement in predictive performance.

In the second category, Serena Ng, Emanuel Moench, and Simon Potter, in “Dynamic Hierarchical Factor Models,” develop and apply a procedure that allows a hierarchy across cross-section units prior to estimation; this is natural, for example, in applications with global, country, and regional factors. In real-time forecasting of real activity, Elena Andreou, Andros Kourtellos, and Eric Ghysels, in “Should Macroeconomic Forecasters Look at High-Frequency Financial Data?” show that quarterly forecasts improve if monthly data are used.

Methods and Application for Dynamic Equilibrium Models – Jesus Fernandez-Villaverde and Frank Schorfheide, Leaders

The dynamic equilibrium group conducts research on a range of subjects related to the construction, computation, estimation, and evaluation of dynamic models and their applications in empirical research. These types of models have become one of the main workhorses of modern macroeconomics and related fields such as finance. Sophisticated empirical analysis based on dynamic equilibrium models has produced novel substantive findings. An increasing number of policy making institutions, including the Federal Reserve Board and many central banks including the European Central Bank, are actively formulating and estimating DSGE models for policy analysis and forecasting. Many of the group’s activities are aimed at creating bridges of communication and cooperation between pure macroeconomics researchers, time-series econometricians, and central bank staff.

One active area of research is the incorporation of time variation into the parameterization of DSGE models. Time-varying parameters can be used, for instance, to capture changes in monetary policy over the post-war period. Roger Farmer, Daniel Waggoner, and Tao Zha (12965) develop and apply tools to solve rational expectations models with regime-switching coefficients. Vasco Curdia and Ricardo Reis (15774) examine to what extent the conclusions derived from estimated DSGE models, for instance with respect to the sources of business cycles, are sensitive to assumptions about the driving forces of macro fluctuations.

Martin Uribe and Stephanie Schmitt-Grohe (14215) study the role of news (or anticipated) shocks for business cycle fluctuations. Because direct information about the agents' information sets is not available, this information needs to be extracted in an efficient manner from the auto-covariance properties of observable macroeconomic variables.

Macroeconomics across Time and Space – Jeremy Greenwood and Lee Ohanian, Leaders

This group uses modern dynamic theory to investigate long-standing questions of substantive historical interest. Research presented at these meetings includes analyses of great depressions, industrial revolutions, the diffusion of new technologies, secular shifts in hours worked and leisure, long-run trends in marriage, women's labor supply, and fertility, the connection between the formation and dissolution of institutions and the economy, the rise in urbanization; international trade and capital flows, and the growth and location of business.

Yuriy Gorodnichenko, Enrique Mendoza, and Linda Tesar (14874) challenge the standard view that Finland's depression of the 1990s was caused by a banking crisis. Instead, they show that the depression began before the crisis, and its inception coincided with the breakup of the former Soviet Union. Their paper develops a quantitative theo-

retic model of Finland's depression based on the very large trade relationship with the USSR that collapsed following the end of the Soviet Union. They show how this shock temporarily reduced output, as the production inputs from this sector were not easily reallocated to other sectors, and then show how this shock was propagated for many years by labor market rigidities that prevented wages from declining and that kept unemployment high.

Another paper that integrates modern approaches to modeling with a long-standing question of historical interest is by Matthias Doepke, Moshe Hazan, and Yushi Maoz (13707). They develop a theory of the post-war baby boom based on the increased demand for female labor during the war, using a model with endogenous fertility and labor force participation. The theory implies that women who worked in the war accumulated important work experience which led to higher wages and also a persistent increase in labor force participation after the war, resulting in that cohort delaying births. In contrast, the theory predicts that younger women will tend to have children earlier. The quantitative analysis generates a substantial baby boom, followed by a baby bust, simply reflecting the one-time wartime increase in the demand for female labor. The theory's predictions are consistent with differences in the timing of births across countries that differed with respect to the relative increases in their wartime demand for female labor in the 1940s.

Betsy Caucutt, Thomas Cooley, and Nezh Guner (12854) undertake an analysis of the rise of social security during the beginning of the twentieth century. They argue that the rise of such programs in the West is linked to the decline of the agrarian economy and the rise of the industrial one. In decades past, the rural population did not favor social security. The median voter was a middle-aged person who earned a lot of his income from land. With industrialization, the value of rural land declined. The population shifted from the countryside to the city. This led to a shift in the median

voter. Now, she was an older, middle-aged urban resident who favored the imposition of a social security system.

Aggregate Implications of Microeconomic Consumption Behavior – Orazio Attanasio, Christopher Carroll, and José Víctor Ríos Rull, Leaders

Research in this group ranges from empirical studies using microeconomic data to theoretical analyses of dynamic stochastic general equilibrium models with uninsurable idiosyncratic risk. At the 2009 Summer Institute, the group dedicated an entire day to a workshop on the Consumer Expenditure Survey, organized in collaboration with the Conference on Research on Income and Wealth (CRIW). The event attracted a large number of academics and users of the CEX, as well as a delegation from the Bureau of Labor Statistics, and included discussions of "Evolution and Change in the Consumer Expenditure Surveys: Adapting Methodologies to Meet Changing Needs," by Karen Goldenberg and Jay Ryan, and "Strengths and Weaknesses of the CE from a BLS Perspective," by Thesia Garner and William Passero. The panel discussion afterwards included NBER President Jim Poterba with Barry Bosworth, Chris Carroll, Stephen Landfeld, and Jonathan Parker. The workshop also included three methodological papers on consumption measures: "Survey Instruments and the Reports of Consumption Expenditures: Evidence from the Consumer Expenditure Surveys," by Erich Battistin and Mario Padula; "Methodological Innovations in Collecting Spending Data: The HRS Consumption and Activities Mail Survey," by Mike Hurd and Susann Rohwedder; and "Five Decades of Consumption and Income Poverty" (14827), by Bruce Meyer and James Sullivan. The current shortcomings of the CEX were discussed extensively, with an eye to possible changes and innovations that would improve the quality of the consumption measures currently available. The active participa-

tion of the BLS delegation was particularly welcome.

Several papers presented to the group provided evidence on income processes: for example, “Changes in the Distribution of Income Volatility,” by Shane Jensen and Stephen Shore; “RIP to HIP: The Data Reject Heterogeneous Labor Income Profiles,” by Dmytro Hryshko; “Semiparametric Characterizations of Income Dynamics,” by James Feigenbaum and Geng Li; and “Wages over the Business Cycle: Spot Markets?” by Marcus Hagedorn and Iourii Manovskii. Another set looked at the topical issues of housing, mortgage markets, and bankruptcy, including “Mortgage Innovation and the Foreclosure Boom,” by Dean Corbae and Erwan Quintin; “Housing and Debt over the Life Cycle and over the Business Cycle,” by Matteo Iacoviello and Marina Pavan; “Bankruptcy and Debt Portfolios,” by Thomas Hintermaier and Winfried Koeniger; “Access to Credit after Bankruptcy: Does it Pay To Be a Deadbeat?” by Ethan Cohen-Cole, Burcu Duygan-Bump, and Judit Montoriol-Garriga; and “Household Borrowing after Personal Bankruptcy,” by Song Han and Geng Li. Others considered different types of investment and other life-cycle decisions such as college enrollment, entrepreneurship, and disability risk, including “Insuring College Failure Risk,” by Satyajit Chatterjee and Felicia Ionescu; “Health Insurance and Entrepreneurship,” by Vincenzo Quadrini; and “Disability Risk, Disability Insurance and Life Cycle Behavior,” by Hamish Low and Luigi Pistaferri.

Income Distribution and Macroeconomics – Daron Acemoglu, Roland Benabou, and Oded Galor, Leaders

This group explores a wide range of issues related to the sources and consequences of inequality at the national and international levels. Much of its discussions have centered on the interplay of markets, technological change, trade, and redistributive policies with geographical, institutional, and cultural

factors in accounting for the remarkable transformation of the world income distribution over the last two centuries, as well as in the sharp rise in inequality within countries during recent decades. The groups’ work is organized along three main avenues of research.

The first line focuses on deep-rooted determinants of the growth process and comparative economic development throughout the course of history, and up to the modern era. These include: 1) geographical factors, such as differences in land endowments and access routes, which were shown to generate permanent differences in both income and ethnolinguistic heterogeneity, by Stelios Michalopoulos (“The Origins of Ethnolinguistic Diversity”) and Louis Putterman and David Weil (14448); 2) long-run consequences of major historical events, such as slavery, by Nils-Petter Lagerlof (“Slavery and Other Property Rights”) and Nathan Nunn (13367), and colonization and the industrial revolution, by Carol Shiue and Wolfgang Keller (10778); 3) initial stocks of scientific knowledge, by Diego Comin, William Easterly, and Erick Gong (12657), and factors affecting the subsequent pace of innovation, such as the levels of diversity and cooperation within a society, by Quamrul Ashraf and Oded Galor (“Human Genetic Diversity and Comparative Economic Development”), or the attitudes of different political and religious groups towards the diffusion of knowledge, by Roland Bénabou, Davide Ticchi, and Andrea Vindigni (“The Political Economy of Science, Religion, and Growth”).

The second theme is the role of political institutions and social conflict in determining cross-country differences in income per capita. From a long-term perspective, a key issue is: what makes institutions so persistent, even when they have very detrimental economic effects, as in the case of entrenched elites, dictatorships, or weak, failed states? This is addressed in studies by Daron Acemoglu and James Robinson (12108); Nicola Gennaioli and Ilia Rainer (“The Modern Impact of Pre-Colonial Centralization

in Africa”); Daron Acemoglu, Davide Ticchi, and Andrea Vindigni (12748); and Daron Acemoglu, James Robinson, and Rafael Santos (15578). With a shorter-run perspective, the main questions explored by the group centered around: 1) the optimal forms and levels of redistribution and social insurance, for example, Emmanuel Farhi and Ivan Werning (11408), Giovanni Violante and Nicola Pavoni (“Optimal Welfare-to-Work Programs”), and Jess Benhabib and Alberto Bisin (14730); 2) the political-economy mechanisms and belief dynamics that can explain why actually observed policies are often so different, for example, Rodney Ramcharan (“Inequality and Redistribution: Evidence from US Counties and States, 1890-1930”), Dietrich Vollrath (“Inequality, Property Taxes, and Public Debt: The United States, 1880–1930”), Roland Benabou (13907), Erzo Luttmer and Monica Singhal (14268), Emmanuel Farhi and Ivan Werning (“The Political Economy of Nonlinear Capital Taxation,”), and Benjamin Olken and Monica Singhal (15221).

The group’s third main line of research aims to: 1) identify the main market and non-market channels through which the distributions of income, human capital, and financial assets affect aggregate economic performance; and 2) bring to light the key determinants of the rise in inequality experienced by most countries over the last quarter-century. On the markets side, the papers have documented the impacts on wages levels and income risk of: sectorial shifts in labor demand, for example, Francisco Buera and Joseph Kaboski (14822); international migration, for example, Jess Benhabib and Boyan Jovanovic (12871); and globalization, for example, Xavier Gabaix and Augustin Landier (12365), and Thomas Philippon and Ariell Reshef (14644). Considerable attention also was devoted to credit market imperfections as impediments to educational or entrepreneurial investments, and to how the human-capital promoting or retarding nature of institutions and policies (child labor regulation, and the availabil-

ity and quality of public education) is shaped by the distribution of ownership of production factors and the interests of landed aristocracies or industrial elites. Examples include Raghuram Rajan and Rodney Ramchandran (14347), and Oded Galor, Omer Moav, and Dietrich Vollrath (“Inequality in Landownership, the Emergence of Human-Capital Promoting Institutions, and the Great Divergence”). On the non-market side, a number of papers have documented and analyzed the role of family decisions (fertility, intra-household bargaining) and the powerful influence of social networks, such as in “Traditional Institutions Meet the Modern World: Caste, Gender, and Schooling Choice in a Globalizing Economy,” by Kaivan Munshi and Mark Rosenzweig. In particular, changing patterns of gender inequality or parental preferences for educated offspring reflect a combination of market and technological forces with slow-moving cultural attributes and gradual adaptation of preferences to economic incentives. An example of this work is Raquel Fernández, Alessandra Fogli, and Claudia Olivetti (“Mothers and Sons: Preference Formation and Female Labor Force Dynamics”), and Matthias Doepke and Fabrizio Zilibotti (12917).

Economic Growth - Charles I. Jones and Peter J. Klenow, Leaders

The growth group focuses on differences in income across countries, firm-level productivity growth, and technical progress over time, as illustrated by the following papers: Simon Johnson, William Larson, Chris Papageorgiou, and Arvind Subramanian (15455) study how revisions to the Penn World Tables—one of the most widely-used datasets in the literature—affect our understanding of economic growth. They document that in the move to the most recent version, the revision to the annual growth rate of a country had a standard deviation of 5.4 percent, much greater than the average growth rate itself of 1.5 percent. Remarkably, the revision to the average 30-year growth rate had a standard deviation of only 1.1 percent.

Daron Acemoglu, Philippe Aghion, Leonardo Bursztyn, and David Hemous (15451) examine theoretically how technological change and environmental problems can interact. In particular, they study situations in which researchers can choose to work on improving “dirty” technologies like the internal combustion engine, or “clean” technologies like

fuel cells and electric cars. They find that achieving optimal growth without an environmental catastrophe often involves not only input taxes (such as a carbon tax) but also efforts to direct technical change through research subsidies or profit taxes. When inputs are sufficiently substitutable, such subsidies or taxes can be temporary.

Mark Aguiar and Manuel Amador (15194) document that high-growth countries tend to accumulate *official* net foreign assets, but not private net foreign assets. Their explanation: the government in power has a bias toward current consumption (which it can direct while it is temporarily in power), and cannot commit the future government to a low tax rate on capital. Reforms that reduce these political economy and contracting frictions result in less government debt, and therefore less temptation to tax capital—but only gradually over time. So growth proceeds as the tax on capital slowly falls and official net foreign assets rise. Their theory implies that unconditional foreign aid does not boost growth even temporarily, and that unconditional debt relief lifts growth only temporarily.

The Credit Rating Crisis

Efraim Benmelech*

The credit crisis of 2008–9 was in many ways a credit rating crisis. Structured finance products, such as mortgage-backed securities, accounted for over \$11 trillion dollars worth of outstanding U.S. debt. The lion's share of these securities were highly rated -- for example, more than half of the structured finance securities rated by Moody's carried a AAA rating, the highest possible credit rating that is typically reserved for securities deemed to be nearly riskless. In 2007 and 2008, the creditworthiness of structured finance securities deteriorated dramatically: 36,346 Moody's rated tranches — tranches are a class of security with a prioritized claim against the collateral pool — were downgraded, and nearly one third of the downgraded tranches bore the AAA rating. In November 2007 alone, there were 2,000 downgrades and many were severe: 500 tranches were downgraded more than 10 notches. The ensuing confusion about the true value of these complicated securities, and the extent of exposure by financial institutions, incited a credit crunch with effects beyond subprime mortgage-related investments.

The Role of Credit Ratings in the Process of Securitization

Securitization is a broad term that encompasses several kinds of structures by which loans, mortgages, or other debt instruments are packaged into securities. The essence of securitization is pooling and tranching. After pooling a set of assets, the issuer creates several different

classes of securities, known as tranches, with prioritized claims against the collateral pool. In a tranching deal, some investors hold more senior claims than others. In the event of default, the losses are absorbed by the lowest priority class of investors before the higher priority investors are affected. Naturally, the process of pooling and tranching creates some securities that are riskier than the average asset in the collateral pool and some that are safer.

The structured finance market is a "rated" market — the vast majority of securities issued are rated by at least one rating agency. Given the complexity of the underlying collateral and the asymmetric information between issuers of these securities and investors, credit ratings serve as a focal point for the quality of the securities.

The interaction between credit ratings and financial regulation was an important driver of growth in securitization markets. The extensive use of credit ratings in the regulation of financial institutions created a natural clientele for highly rated — and in particular AAA-rated — securities. Minimum capital requirements at banks, insurance companies, and broker-dealers, depend on the credit ratings of the assets on their balance sheets. Pension funds also face rating-based investment restrictions. The process of securitization enabled these investors to participate in asset classes from which they would normally be prohibited. For example, an investor required to hold investment-grade securities could not directly invest in B-rated corporate loans but could invest in a AAA-rated CLO security backed by a pool of B-rated corporate loans. Structured finance securities typically yield a higher interest rate than similarly rated corporate or sovereign

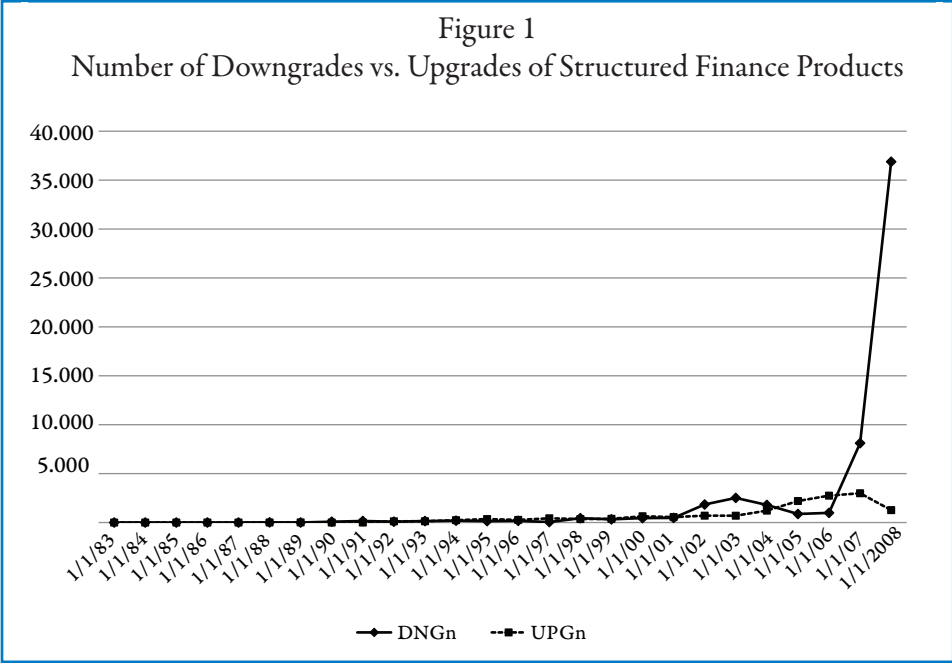
bonds, making them an attractive investment for rating-constrained investors.

The Collapse of Credit Ratings during the Crisis

Jennifer Dlugosz and I examine the rating performance of all structured finance securities issued in the period 1990–2008.¹ We show that the deterioration in the creditworthiness of structured finance products began in 2007. There were more than 8,000 downgrades in 2007 — an eightfold increase over the previous year. In the first three quarters of 2008, there were 36,880 downgrades, overshadowing the cumulative number of downgrades since 1990. Downgrades were not only more common in 2007 and 2008 but also more severe. The average downgrade was 4.7 notches in 2007 and 5.8 notches in 2008, compared to 2.5 notches in both 2005 and 2006. Meanwhile, upgrades were less frequent and smaller in magnitude on average.

Many of the downgrades in 2007 and 2008 were tied to collateralized debt obligations (CDOs) backed by assets that are themselves structured (ABS CDOs). While initially ABS CDOs were diversified and collateralized by assets from a variety of sectors, they became more concentrated over time. Since 2003 the primary asset classes backing them were subprime and non-conforming residential mortgage-backed securities. Many of these ABS CDOs were downgraded during the crisis, leading to large selloffs of these securities and losses at financial institutions. Dlugosz and I show that in early 2009, financial institutions around the world wrote down more than half a trillion dollars, out of which more than 200 billion dollars resulted from exposure to ABS CDOs that were severely downgraded.

*Benmelech is a Faculty Research Fellow in the NBER's Programs on Corporate Finance and Development of the American Economy and is an associate professor of economics at Harvard University. His profile appears later in this issue.



that the tranche will be downgraded within a year after issuance is higher for tranches rated by only one rating agency. Moreover, tranches rated by only one agency are not only more likely to be downgraded but also experience more severe drops in creditworthiness when compared to tranches that are rated by more than one agency. Our results also provide suggestive evidence that the rating model used by S&P may have been inflated and that rating shopping may have played a role in the collapse of the structured finance market. Industry experts questioned the S&P rating model and some of its underlying assumptions. For example, on December 19, 2005, S&P put 35 tranches from 18 different deals on negative watch following an update of its rating criteria. Out of the 18 deals, 14 carried ratings only from S&P—suggesting that the issuers involved in these deals may have “shopped” for their rating.

Why Did the Ratings Collapse?

What led to the collapse of structured finance credit ratings? Were the initial credit ratings assigned to securitized bonds too high? Or was it the unforeseen economic downturn and nationwide decline in the housing market that led to the deterioration in credit quality of these securities? Put differently, did the credit rating agencies make honest mistakes in estimating default risk, or did they assign inflated credit ratings to risky securities?

A. Rating Shopping

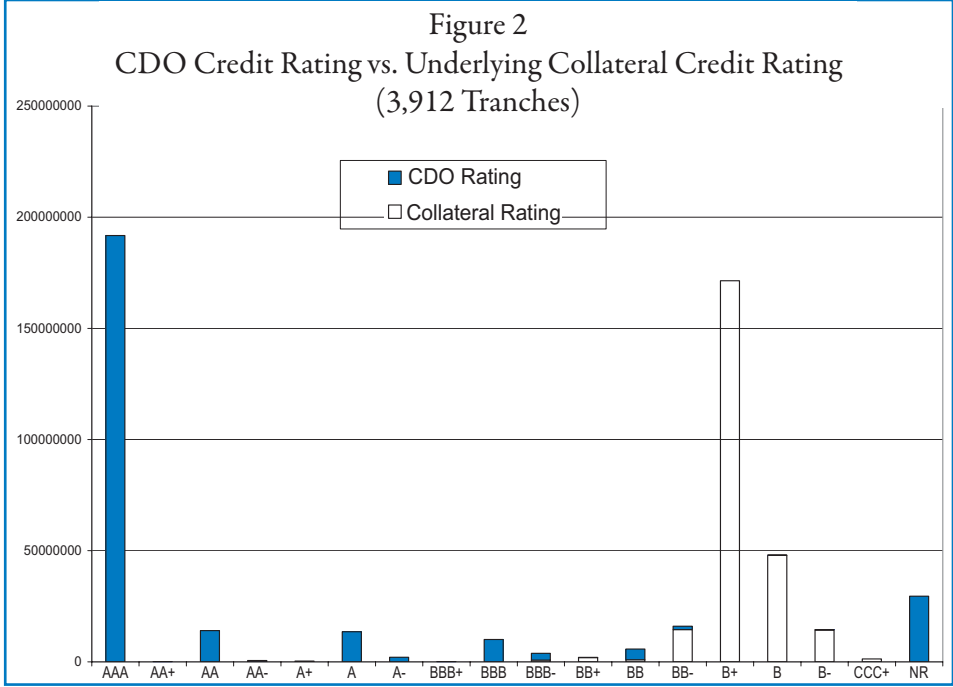
Rating shopping occurs when an issuer chooses the rating agency that will assign the highest rating or that has the most lax criteria for obtaining a desired rating. Most rating agencies operate under an issuer-pays revenue model where issuers solicit and pay for their own bond ratings. If reputational concerns are not strong enough to discipline rating agencies, the issuer-pays model can result in inflated ratings. Rating shopping concerns are particularly pronounced for structured finance bonds—as opposed to corporate or municipal bonds—because of the lack of public information on these securities. Recent research has developed models in which rating agencies trade-off the value from inflating its client’s rating against an expected reputation cost.²

However there is little empirical evidence testing the rating shopping hypothesis.

Dlugosz and I test whether “rating shopping” led to inflated ratings of ABS CDOs. We examine whether the number of agencies that rate a security can predict the probability of subsequent downgrades. Structured finance tranches are rated by Moody’s and S&P, and to a lesser degree by Fitch, hence the number of raters can range from 0 to 3. We find that the probability

B. Rating Alchemy and the Failure of the Black Box

In “The Alchemy of CDO Credit Rating,” Dlugosz and I study the underlying collateral of CDOs secured by corporate loans.³ We find a striking difference between the credit rating structure of the CDO and the credit quality of the collateral pool.



While the average credit quality of the loans being securitized is around B, more than 70 percent of the dollar amount of CDOs was initially rated as AAA. For this mismatch to be appropriate, it would need to be the case that a pool of assets with an average credit quality of B be able to withstand enough losses such that 70 percent of its liabilities will still remain default-risk free.

We also document a large degree of uniformity in CDO structures. The CDOs that we study have very similar liability structures and very similar collateral pools. There is little variation in the quality of the underlying collateral across different issuers; while we study around 4,000 tranches they all seem to conform to the same CDO model. What caused the uniformity in CDO structures?

One potential answer is that CDO issuers just follow market convention: if some CDO structures have been perceived as desirable, then other issuers will follow the same convention. However, while this would explain the uniformity in deal structures (that is, the amount allocated to each category), what explains the uniformity of the underlying collateral? An alternative explanation is that

the issuers had access to the rating model of the credit rating agencies. According to this explanation, the rating agencies provided issuers with their model, and issuers structured their CDOs accordingly.

Anecdotal evidence suggests that the rating agencies models indeed were known to CDO issuers and were provided to them directly by the rating agencies. For example, the CDO Evaluator Manual—an optimization tool used by S&P—enabled issuers to achieve the highest possible rating at the lowest possible cost. The model, for example, would indicate to issuers when they had “excess collateral” and would advise issuers on: “the percentage of assets notional needs to be eliminated (added) in order for the transaction to provide just enough support at a given rating level.”

Thus, the rating agencies may have served not just as monitors and evaluators of existing structures, but rather as architects and creators of new securities. Providing such models to issuers potentially led to the creation of CDOs with the minimum possible collateral needed to obtain an AAA credit rating. The uniformity across CDOs and the low credit ratings of the underlying collateral suggest

that most issuers were using the model to target the highest possible credit rating at the lowest cost. If there were mistakes embedded in these credit rating black boxes—those were probably compounded over the trillions of dollars that were deliberately structured by CDO issuers using this model.

¹ E. Benmelech and J. Dlugosz, “The Credit Rating Crisis,” NBER Working Paper No. 15045, June 2009, and NBER Macro Annual, 2009, forthcoming.

² P. Bolton, X. Freixas, and J. Shapiro, “The Credit Ratings Game,” NBER Working Paper No. 14712, February 2009; E. Damiano, H. Li, and W. Suen, “Credible Ratings,” Theoretical Economics, 3 (September 2008), pp. 325–65; F. Sangiorgi, J. Sokobin, and C. Spatt, “Credit Ratings Shopping, Selection and the Equilibrium Structure of Ratings,” NBER Working Paper No. 14712, November 2008.

³ E. Benmelech and J. Dlugosz, “The Alchemy of CDO Credit Ratings,” NBER Working Paper No. 14878, April 2009, and Journal of Monetary Economics, 56(5) (July 2009), pp. 617–34.

Measuring Returns to Healthcare

Joseph Doyle*

Healthcare spending in the United States comprises 16 percent of GDP—nearly 80 percent more than in the median OECD country and 45 percent above that of the second-highest spending nation, France. Across countries, and across markets within the United States, the vast disparities in spending

*Doyle is a Faculty Research Fellow in the NBER's Program on Aging and the Alfred Henry and Jean Morrison Hayes Career Development Associate Professor of Applied Economics at MIT's Sloan School. His profile appears later in this issue.

are not associated with better measures of health-outcome.¹ However, evidence from time series and panel data suggest that higher healthcare spending has generated benefits that, when converted to dollar magnitudes in various ways, appear to exceed their costs.² Of course, the type of variation in treatment intensity differs across these two types of comparisons, but the question remains: are the returns to healthcare large or small?

Estimating such returns can be confounded because medical providers attempt to provide each patient with a

particular level of care. With heterogeneous returns, greater care is likely provided to those with the highest returns. This would tend to bias results toward finding beneficial effects of treatment. At the same time, patients with the highest returns may be those in relatively poor health. Indeed, hospitalized patients who receive more care are much more likely to die in the hospital, even after controlling for a host of observable characteristics: more care is provided to patients in worse health. With the raw correlation between treatment and health seemingly negative,

estimating returns is an uphill battle.

In a series of research studies, my co-authors and I have explored natural experiments that can shed some light on the returns to healthcare. Most of these papers consider conditions where selection bias associated with admission into the hospital is less of an issue: childbirth—the most common reason for hospitalization in the United States—and emergency admissions. This research summary briefly describes this work and points to future work in the area.

Evidence from At-Risk Newborns

One project, joint with Douglas Almond, Amanda Kowalski, and Heidi Williams, uses the idea that diagnostic thresholds can offer the potential to estimate returns to healthcare.³ If physicians provide greater levels of care to patients falling just above a diagnostic criterion, then researchers can compare treatment and health outcomes for patients just above and below the threshold. The nature of the variation allows us to measure marginal returns, which are crucial for the interpretation of whether *additional* care saves lives.

Our work focuses on at-risk newborns on either side of the “very low birthweight” threshold of 1500 grams (3lbs. 5oz.) The underlying health of newborns who weigh 1499 grams is similar to those weighing 1500 grams, yet the rules of thumb used by physicians and hospital protocols call for additional attention for newborns below the threshold. By comparing newborns on either side of the threshold, we are able to avoid some of the confounding factors that usually affect measurements of the returns to health care.

We show that newborns with birthweights just below 1500 grams have discontinuously higher hospital costs than slightly heavier newborns, on the order of \$10,000 each. When we study data from the census of U.S. births over twenty years, we find that newborns with birthweights just below 1500 grams have a single percentage-point lower infant mortal-

ity rate than newborns with birth weights just above this cutoff, even though mortality risk tends to decrease with birthweight. This constitutes a relatively large reduction when compared to a mortality rate of 5.5 percent just above 1500 grams. We conclude that the additional medical attention afforded to very low birthweight newborns is highly cost effective at saving lives.

The same project shows that hospitals with the most state-of-the-art neonatal intensive care units (NICUs) are less likely to use the threshold, whereas changes in treatment and mortality *are* found at those hospitals with lower-level or no NICUs.

Evidence from “Uncomplicated” Births

In another study with Douglas Almond, we test whether a longer stay in the hospital after a birth affects the health of newborns and mothers.⁴ We use insurance rules that provide coverage for one or two days in the hospital after birth, and these days are counted as “the number of midnights in care.” That is, a newborn delivered at 12:05 a.m. will have one more night of reimbursable care than an infant born a few minutes earlier. In a dataset of California births from 1991–2002—including nearly 100,000 births within 20 minutes of midnight—we find that the discontinuous change in insurance coverage leads to significantly longer stays for those born just after midnight than for those born before midnight. We find no differences in major health problems, summarized by hospital readmissions and mortality, for either the infants or the mothers. Together with a 1997 law that mandated coverage for a minimum of two days, these results suggest that increases in the length of stay from 1-2 days or from 2-3 days impose substantial costs without apparent health benefits.

In comparison to the findings on at-risk newborns described above, this study shows the results that apply to “uncomplicated” deliveries. These newborns are representative of the typical birth. While new parents may benefit from the addi-

tional night of supervision, we conclude that in this instance the insurance mandates result in moral hazard: greater use of hospital resources with little benefit in terms of major health problems. This is consistent with efforts by insurers to reduce stays to one night in care.

Evidence from Health Emergencies

As noted earlier, there is a large amount of regional variation in health-care spending within the United States. The *Dartmouth Atlas of Healthcare* shows that some markets spend 60 percent more than others, yet survival from a heart attack is remarkably similar across these areas. Is it possible that individuals in high-spending areas are in worse health in ways that are difficult to control for in the comparisons?

While it is not possible to randomly assign patients to different healthcare systems, I have compared the outcomes of patients who are exposed to different healthcare systems not designed for them: patients who are far from home when a health emergency strikes.⁵ Patients who experience these health shocks may find themselves in an area that spends a great deal on patients or in one that tends to spend less. For example, West Palm Beach and Fort Lauderdale are neighboring cities on Florida’s east coast with similar lodging prices, yet Fort Lauderdale tends to spend 30 percent more on heart attack patients. The idea is that these types of cities are close demand substitutes in terms of destinations, and they attract “close substitutes” in terms of patients.

Contrary to the literature that focuses on local patients, analyzing visitors to Florida who have a serious heart-related emergency in a high-spending market results in a 20 percent lower mortality rate than for patients in low-spending areas. These estimates are robust across different types of patients, including patient-income levels, and within groups of similar destinations. In addition, the results suggest that intensive-care unit services drive cost differences, and they appear to be cost effective.

The results apply to emergency care, and specifically to a set of patients healthy enough to travel. To the extent that the results may apply more broadly, it appears that high-spending areas may not be as wasteful as the previous cross-section results suggest.

The Consequences of Being Uninsured

An earlier study also considers health shocks by comparing patients with and without health insurance following a severe automobile accident.⁶ This is a sudden health emergency when the individuals have no choice but to visit the hospital. The analysis uses a dataset originally intended for highway-safety research linking hospital discharge records with police reports. I find that the uninsured receive 20 percent less care and have a significantly higher mortality rate.

Another innovation in this project is the comparison group available in the rich data source: individuals who have health insurance but do not have automobile insurance according to the police report. These patients are quite similar to those who do not have health insurance, and the results are similar when the analysis is restricted to these two groups. This is one of the few studies to examine the potential effects of health insurance directly on health outcomes.⁷ The results again suggest that greater treatment intensity yields health benefits for trauma care.

Returns to Physician Quality

Some physicians provide much more care to patients than others, which is a major source of variation within and across cities. Patients are referred or choose their physicians, however, and it is not clear how much of the variance in care can be explained by differences among the patients themselves.

A project with Todd Wagner and Steven Ewer studies a setting where over 30,000 patients in a large, urban hospital were randomly assigned to physician

teams.⁸ Further, the teams are affiliated with one of two academic institutions: one institution is among the top medical schools in the United States, while the other institution is ranked lower in the quality distribution. Because of the randomization, patients treated by the two teams have identical observable characteristics. Further, both teams have access to a single set of facilities and ancillary staff, because care is located in the same hospital.

We show that across common conditions, the more-prestigious teams provide care that is 10–25 percent less costly than the less-prestigious ones. Health outcomes are not related to the physician-team assignment, and the estimates are precise: they (statistically) rule out better health outcomes associated with assignment to the more-prestigious team. Further investigating the source of the treatment differences, the results are consistent with the ability of physicians in the lower-ranked institution to substitute diagnostic tests and specialist consultations for the faster judgments of physicians from the top-ranked institution.

The comparison is among only two institutions, but the results suggest a number of implications. First, local-area variation in care can be substantial, even after controlling for patient characteristics. Second, inequality in access to high-quality physicians may lead to differences in the use of specialists and testing, but not to health disparities. Third, a relaxation of accreditation standards may not adversely affect the quality of care, but it may raise operating costs. Fourth, while previous studies have found that high-cost areas are associated with lower-quality care, a greater reliance on specialists, and little difference in health outcomes, and interpreted this as evidence of wasteful spending, these results suggest the possibility of an alternative interpretation. Areas with lower-quality providers may require greater treatment intensity and the use of specialists in order to achieve outcomes on par with areas with higher-quality providers. This appears to be a fruitful area for future research.

Summary

Measuring returns to healthcare can be confounded by the nature of the delivery: more care is provided to patients in worse health. My research has investigated instances when additional care is less likely to be related to underlying patient health and found large returns for at-risk newborns and patients receiving emergency care, but small returns for longer postpartum hospital stays among typical births. Future work should continue to consider additional types of patients and treatments, begin to consider chronic conditions, and investigate the interaction between physician quality and the cost of care.

¹ See, for example, E. Fisher, D. Wennberg, T. Stukel, D. Gottlieb, F. Lucas, and E. Pinder, "Implications of Regional Variations in Medicare Spending, Part 2: health outcomes and satisfaction with care," in *Annals of Internal Medicine*, 138(4) (2003), pp. 288–98; and A.M. Garber and J. S. Skinner, "Is American Healthcare Uniquely Inefficient?" *Journal of Economic Perspectives*, 22(4) (2008), pp. 27–50.

² D. Cutler, A. Rosen, and S. Vijan, "The Value of Medical Spending in the United States, 1960–2000," *New England Journal of Medicine*, 355 (2006), pp. 920–27; and K.M. Murphy and R. Topel, "The Economic Value of Medical Research" in *Measuring the Gains from Medical Research: An Economic Approach*, K.M. Murphy and R. Topel, eds. Chicago: University of Chicago Press, 2003.

³ D. Almond, J. Doyle, A. Kowalski, and H. Williams, "Estimating Marginal Returns to Medical Care: Evidence from Care for At-Risk Newborns," NBER Working Paper No. 14522, December 2008, and *Quarterly Journal of Economics*, forthcoming.

⁴ D. Almond and J. Doyle, "After Midnight: A Regression Discontinuity Design in Length of Postpartum Hospital Stays," NBER Working Paper No. 13877, March 2008.

⁵ J. Doyle, "Returns to Local-Area Health Care Spending: Using Health

Shocks to Patients Far from Home,” NBER Working Paper No. 13301, August 2007.

⁶ J. Doyle, “Health Insurance, Treatment, and Outcomes: Using Auto Accidents as Health Shocks,” NBER Working Paper No. 11099, February

2005, and *Review of Economics and Statistics*, 87(2) (2005) pp. 256–70.

⁷ *Institute of Medicine*, Hidden Costs, Value Lost: Uninsurance in America, Washington D.C.: National Academies Press, 2003, p. 141.

⁸ J. Doyle, S. Ewer, and T. Wagner, “Returns to Physician Human Capital: Analyzing Patients Randomized to Physician Teams,” NBER Working Paper No. 14174, July 2008.

New Dynamic Public Finance

Mikhail Golosov and Aleh Tsyvinski*

Many problems in public finance and macroeconomics, such as the taxation of capital or the provision of Social Security and disability insurance, are dynamic in nature. The individuals who pay taxes or claim benefits are long-lived. The tax and benefit policies in place in one period can affect their behavior in other periods. For example, increasing retirement benefits may affect individuals’ behavior and savings in earlier years.

The New Dynamic Public Finance literature extends the traditional literature on optimal income tax and optimal program design, much of which focused on settings in which individuals made decisions in a single period, to focus on such dynamic settings.¹ While the same efficiency-equity tradeoffs that apply in single-period settings also arise in dynamic settings, there are additional tradeoffs between providing insurance and preserving incentives. When individuals live for many periods, they may experience both favorable and unfavorable “shocks” as they age: unexpected increases in their wages, or the early onset of a disability, for example. Public policy can provide insurance against adverse shocks, but it may do so at some cost in incentives. Much of the

research in New Dynamic Public Finance is directed at understanding how one can design social insurance or redistribution systems that achieve distributional objectives while ensuring necessary incentives to provide effort or work throughout individuals’ lives.

When designing policy in dynamic settings, it is important to take account of the random shocks that confront individuals over time. These may be shocks to earnings capacity, or health status, or financial market returns. In each case, individual taxpayers or program beneficiaries are likely to have more information on their circumstances than the government does. The government cannot easily observe health status or hourly wage rates, and it cannot condition its tax or social insurance rules on them. The policy challenge is to preserve incentives for individual work and saving while still raising the necessary funds for redistribution or government revenue.

Consider a simple example of a dynamic social insurance problem: an able young worker may become disabled later in life. It may be possible to claim to be disabled even if one is able to work. For example, one can pretend to be suffering from back pain which is very difficult to verify. The fundamental challenge in designing a disability insurance system is to provide adequate transfers to truly disabled workers while discouraging fake disability applications. What a

worker believes about his future decisions regarding whether to claim disability will affect his labor supply and saving choices while young. If he believes that he is very unlikely to apply for and receive disability benefits in the future, for example, then he is likely to save more in his younger years. Similarly, an individual’s past saving choices may affect his willingness to fake disability and to claim disability benefits at an older age.

We highlight two sets of findings that have emerged from our own research, and that of other scholars, in the area of New Dynamic Public Finance. First, the tax treatment of saving is a key policy instrument for affecting dynamic incentives, and policymakers may need to consider its impact on a variety of labor market incentives. Second, the availability of private insurance against various risks may have an important effect on the way that government tax and transfer programs influence household behavior.

Tax Policy toward Saving Can Affect Dynamic Incentives

In our work with Narayana Kocherlakota, we develop an important insight about policy design in dynamic settings. When agents receive random shocks to their earnings capacity, one feature of government policies that achieves a Pareto-efficient allocation—one in which no one could be made better off with-

*Golosov and Tsyvinski are Research Associates in the NBER’s Program on Public Economics and Professors of Economics at Yale University. Their profiles appear later in this issue.

out making someone else worse off—is a tax that discourages savings.² This result holds quite generally, as long as there is some uncertainty about future individual shocks. Our work on disability insurance suggests that a key feature of policies that preserve incentives while achieving redistributive goals is an *asset-test* in which disability (or more, generally, retirement) benefits are paid only to individuals who have assets below a specified limit³. That is, asset testing is an implicit tax on savings that discourages fake applications for disability insurance. More generally, in both tax and social insurance settings, policies may be conditioned on the amount of savings that an individual accumulates, and they may be history-dependent in the sense that eligibility for benefits may depend on the applicants' past actions and experiences.

In the disability example above, we can provide an intuition for the potential role of a tax on savings. Consider a system of disability transfers that gives a disabled worker \$1000 per month once he or she is classified as disabled. An able worker contemplates whether to continue working, or to claim disability next month. Assume for simplicity that the disability verification process works poorly, so that if he reports that he is disabled, he will surely receive the \$1000 monthly disability payment going forward. If he does not fake disability, however, and claims disability only if he is truly disabled, his income switches from being a certain \$1000 per month on disability to a “lottery”: \$1000 per month if he is disabled, and a higher amount if he is able and continues to work. Someone who intends to fake disability will prepare for that eventuality by saving more in earlier periods, because he knows that at some point he will claim disability and his income will drop to \$1000/month. A disability insurance scheme that introduces a tax on savings, for example by paying benefits only to those with low levels of assets, will help to discourage fake applicants.

One of the central insights of the New Dynamic Public Finance research program is that when designing a taxation or social insurance system, one must

take into account agents' saving decisions. Building on work by Christophe Chamley and Ken Judd⁴, we know that efficient long-run policies set the tax rate on capital income to zero. A key difference between our analysis and theirs is that we allow for individuals to experience various “shocks” over time, which means that insurance considerations can affect the nature of the efficient policy.

Interaction between Private and Public insurance

New Dynamic Public Finance places central emphasis on the insurance element of public programs, so it is no surprise that the structure of *private* insurance markets is a key consideration in public program design. Our work examines how the impact of various government transfer and insurance programs depends on the other insurance options available to households.⁵ In many circumstances, private markets can provide insurance against shocks that individuals experience. Private insurers offer health, disability, and property-casualty insurance. They also offer annuities to insure against longevity risk. The presence of private competitive insurance markets may significantly change the economic effects of government policies, and the trade-off between redistribution and the provision of incentives. Suppose there is no government insurance against disability shocks. One can expect then that the private insurance markets will arise to provide insurance. That does not mean that the private insurance markets will be able to provide perfect insurance—the problem of determining who is truly disabled is still present. But it is possible, for example if the key market failure is the inability to observe true disability status, for the private market to be able to provide the same degree of insurance as the government. If the government were to create a public disability program in this setting, its only effect would be to completely “crowd-out” private insurance. If a government provides more insurance, the competitive markets will provide correspondingly less: the government insur-

ance and the market insurance are perfect substitutes.

Our research suggests that relatively specific features of the private insurance market, such as whether an insurer can restrict an insurance buyer to purchasing insurance against a particular risk from only one insurer, or whether an insurer can monitor all of the other insurance contracts that an individual purchases, play a key role in determining whether government provision of insurance can lead to a more efficient allocation of risk and can improve the tradeoff between insurance and the provision of incentives. For this purpose, “insurance contracts” should be interpreted quite broadly. For example, an individual who saves today to prepare for adversity tomorrow can be thought of as purchasing insurance.

The key takeaway from our work is that considering what private insurance markets can and cannot do is essential to evaluating the welfare effects of increasing government provision of insurance. In many cases, the only effect of government is crowding out of private insurance. In other cases, the government may be able to correct inefficiencies in the provision of private insurance. It is important to remember, however, that the set of private insurance markets is not fixed over time. When government policy changes, the set of insurance contracts offered by private firms may also change. Policy designers should be careful about assuming that the nature of insurance arrangements offered by the private sector might generate a misleading account of how new government social insurance programs affect the private insurance marketplace.

The Way Forward

A key challenge for researchers in New Dynamic Public Finance is developing concrete, data-based practical implications of theoretical models. Progress on this front is just beginning. In our work with Troshkin (2009), we show how techniques that are familiar to public finance economists from the analysis of static taxation models can be extended to the dynamic settings. Adding dynamics to the

standard economic model introduces both analytical challenges and greater richness for the possible set of policies that might be implemented. It is possible, for example, to consider history-dependent policies, (taxes or transfers that depend on past work and savings decisions), and dynamic incentives such as asset-testing improve incentives and redistribution.

Many unresolved questions lie ahead, and answering them will require both a general algorithm that will allow us to solve quantitatively a broader set of models and empirical work that provides realistic distributions for earnings and health shocks to individuals. It is also important to bridge the gap between the research in this literature and the earlier research which addressed many similar questions but did not incorporate dynamic elements.⁶

¹ For a survey see M. Golosov, A. Tsyvinski, and I. Werning, "New Dynamic Public Finance: A User's Guide," in NBER Macroeconomics Annual, D. Acemoglu, K. Rogoff, and M. Woodford eds., Cambridge, MA: MIT Press, 2006; and N. Kocherlakota, *The New Dynamic Public Finance*, Princeton University Press, forthcoming 2010.

² The general proof is provided in M. Golosov, N. Kocherlakota, and A. Tsyvinski, "Optimal Indirect and Capital Taxation," *Review of Economic Studies*, Vol. 70, No. 3, 2003.

³ M. Golosov and A. Tsyvinski, "Designing Optimal Disability Insurance: A Case for Asset Testing," NBER Working Paper No. 10792, September 2004, and *Journal of Political Economy*, Vol. 114, No. 2, 2006.

⁴ K.L. Judd, "Redistributive Taxation

in a Simple Perfect Foresight Model," *Journal of Public Economics*, Vol. 28, No. 1, 1985, and C. Chamley, "Optimal Taxation of Capital Income in General Equilibrium with Infinite Lives," *Econometrica*, Vol. 54, No. 3, 1986.

⁵ M. Golosov and A. Tsyvinski, "Optimal Taxation with Endogenous Insurance Markets," *Quarterly Journal of Economics*, Vol. 122, No. 2, 2007.

⁶ E. Saez, "The Desirability of Commodity Taxation Under Non-Linear Income Taxation and Heterogeneous Tastes," NBER Working Paper No. 8029, December 2000, and *Journal of Public Economics*, Vol. 83, No. 2, 2002; and P. Diamond, "Optimal Income Taxation: An Example with a U-Shaped Pattern of Optimal Marginal Tax Rates," *American Economic Review*, Vol. 88, No. 1, 1998.

NBER Profile: Efraim Benmelech

Efraim Benmelech is a Faculty Research Fellow in the NBER's Programs on Corporate Finance and Development of the American Economy. He is also an associate professor of economics at Harvard University.

Benmelech received a B.A. in economics and an M.B.A. from the Hebrew University at Jerusalem, and a Ph.D. in financial economics from the University of Chicago's Graduate School of Business. He joined Harvard's faculty when he graduated from the University of Chicago in 2005.

Benmelech's research is mainly in the field of corporate finance, focusing on bankruptcy, financial contracts, and the real effects

of financial distress. He also studies the economics of terrorism. Currently, Benmelech is analyzing the relation between financial distress and labor relations, focusing in particular on "pension dumping," the process of terminating defined benefit pension plans in the face of financial distress, and on the consequences of underfunded defined-benefits pension plans for wage renegotiations.

Benmelech lives in Newton with his wife, Shikma, and their four children: Machol, Shoham, Attar, and Millo.



NBER Profile: *Joseph Doyle*



Joseph Doyle is a Faculty Research Fellow in the NBER's Aging, Children, and Environmental and Energy Economics Programs. He is also the Alfred Henry and Jean Morrison Hayes Career Development Associate Professor of Applied Economics at MIT's Sloan School of Management. He completed his B.S. at Cornell University in 1996 and his Ph.D. in economics at the University of Chicago in 2002. Before attending graduate school, he worked as an assistant economist at the Federal Reserve Bank of New York.

Doyle's areas of specialization are health economics, public economics, and

labor economics. His research focuses on measuring the returns to healthcare, assessing the role of physicians' human capital on their treatment decisions and patients' health outcomes, and evaluating the economics of child welfare programs, in particular the effects of foster care on long-term outcomes for children.

Doyle lives in Boston with his wife, Michelle, and their two sons, Jack and Michael. They enjoy digging: in the sand during the summer and in the snow during the winter.

NBER Profile: *Mikhail Golosov*

Mikhail Golosov is a Research Associate in the NBER's Program on Public Economics and a Professor of Economics at Yale University.

He received his B.A. in Economics and Banking from Belarus State Economic University, his M.A. in Economics from the University of British Columbia, and his Ph.D. in Economics from the University of Minnesota.

Before joining Yale's economics faculty in 2009, he taught at MIT. He has also been

a Visiting Assistant Professor at Harvard University and the University of Chicago, and a Visiting Scholar at the Einaudi Institute for Economics and Finance, the Federal Reserve Board of Governors, the Federal Reserve Bank of Atlanta, and the Federal Reserve Bank of Minneapolis.

Golosov lives in New Haven. In his spare time he enjoys playing tennis, horseback riding, and traveling.



NBER Profile: *Aleh Tsyvinski*



Aleh Tsyvinski is a Research Associate in the NBER's Programs on Economic Fluctuations and Growth and Public Economics. He is also a Professor of Economics at Yale University and Co-Director of the Macroeconomic Research Program of the Cowles Foundation for Research in Economics at Yale.

Tsyvinski was born in Belarus, where he received an undergraduate degree from the Belarus State Economic University in

Economics and Banking. He received his Ph.D. in Economics from the University of Minnesota in 2003. Before joining Yale's economics department in 2008, he taught at the University of California, Los Angeles and at Harvard University.

Tsyvinski's research interests include the analysis of fiscal policy and the effects of taxation.

Conferences

Economic Research on African Development Successes

The first of three NBER conferences on “Economic Research on African Development Successes” took place in Cambridge on December 11 and 12, 2009. The conference organizers, all NBER Research Associates, were Sebastian Edwards of the University of California, Los Angeles, Simon Johnson of MIT, and David N. Weil of Brown University.

Five of the research projects that were discussed at the meeting were approaching completion. They are:

- “Cape Verde and Mozambique as Development Successes in Sub-Saharan Africa”
Jorge Braga de Macedo, Universidade Nova de Lisboa and NBER, and **Luís Brites Pereira**, Universidade Nova de Lisboa
- “Lesotho’s Export Performance: An African Success Story?”
Lawrence Edwards, University of Cape Town, and **Robert Z. Lawrence**, Harvard University and NBER
- “Mauritius: African Success Story”
Jeffrey Frankel, Harvard University and NBER
- “Borders or Barriers? The Impact of Borders on Agricultural Markets in West Africa (Niger, Nigeria)”
Jenny C. Aker, Tufts University; **Michael W. Klein**, Tufts University and NBER; and **Stephen O’Connell**, Swarthmore College
- “The Greatest of All Improvements: Roads, Agriculture, and Economic Development in Africa”
Douglas Gollin, Williams College, and **Richard Rogerson**, Arizona State University and NBER

Summaries of these papers, and videos of the corresponding conference presentations, may be found at:
<http://www.nber.org/confer/2009/ADSf09/summary.html>

In addition, a number of other early-stage projects were discussed:

- “The Return to Capital for Small Retailers in Kenya”
Michael Kremer, Harvard University and NBER; **Jonathan Robinson**, University of California, Santa Cruz; and **Olga Rostapshova**, Harvard University
- “Deals versus Rules: Policy Implementation Uncertainty and Why Firms Hate It”
Mary Hallward-Driemeier, The World Bank, and **Lant Pritchett**, Harvard University
- “Family Ties, Inheritance Rights and Successful Poverty Alleviation (Ghana)”
Edward Kutsoati, Tufts University, and **Randall Morck**, University of Alberta and NBER
- “The Financial System in Burundi: An Investigation of its Efficiency in Resource Mobilization and Allocation”
Leonce Ndikumana, African Development Bank; **Janvier Nkurunziza**, United Nations Conference on Trade and Development (UNCTAD); and **Prime Nyamoya**, OGI Consulting Group, Burundi
- “An African Success: Banking in Nigeria and the Poor”
Lisa Cook, Michigan State University
- “Evaluating the Effects of Large Scale Health Interventions in Developing Countries: The Zambian Malaria Initiative”
Nava Ashraf, Harvard University and NBER; **Günther Fink**, Harvard University; and **David N. Weil**

(continued on next page)

- “What Drives Success in Children’s Educational Outcomes in Poor Villages in Rural West Africa, the Case of Guinea-Bissau?”
Peter Boone, London School of Economics, and **Simon Johnson**
- “Health Impacts of a Schooling CCT Intervention (Malawi)”
Sarah Baird, University of California, San Diego; **Ephraim Chirwa**, University of Malawi; **Jacobus Joost De Hoop**, Tinbergen Institute; **Craig McIntosh**, University Of California, San Diego; and **Berk Özler**, The World Bank
- “Reducing Gender-based Violence: Evaluating Interventions in South, Central, and East Africa”
Radha Iyengar, London School of Economics and NBER
- “State versus Consumer Regulation: The Case of Road Safety in Kenya”
James Habyarimana and **William Jack**, Georgetown University

Capitalizing China

The National Bureau of Economic Research and the Chinese University of Hong Kong jointly organized a conference on Capitalizing China, which took place in Hong Kong on December 15–16, 2009. The organizers were Joseph Fan of the Chinese University of Hong Kong and Randall Morck of NBER and the University of Alberta, Canada. These papers were presented and discussed:

- “Why Are Saving Rates So High in China?”
Dennis Yang and **Junsen Zhang**, The Chinese University of Hong Kong, and **Shaojie Zhou**, Tsinghua University
- “The Visible Hand behind China’s Growth”
Joseph Fan; **Jun Huang**, Shanghai University of Finance & Economics; **Randall Morck**; and **Bernard Yeung**, New York University and University of Singapore
- “Financing Strategies for Nation Building”
Zhiwu Chen, Yale University, and **William N. Goetzmann**, Yale University and NBER
- “China’s Financial System: Opportunities and Challenges”
Franklin Allen and **Chenyang Zhang**, University of Pennsylvania; **Jun Qian**, Boston College; and **Mengxin Zhao**, University of Alberta
- “Assessing China’s Top-Down Securities Markets”
William Allen, New York University, and **Han Shen**, Davis Polk & Wardwell, Hong Kong
- “The Governance of China’s Finance”
Katharina Pistor, Columbia University
- “The Corporate Savings Puzzle in China: A Comparative Perspective”
Tam Bayoumi and **Hui Tong**, IMF, and **Shang-Jin Wei**, Columbia University and NBER
- “Provincial and Local Governments in China: Fiscal Institutions and Government Behavior”
Roger H. Gordon, University of California, San Diego and NBER, and **Wei Li**, University of Virginia
- “Institutions and Information Environment of Chinese Listed Firms”
Joseph Piotroski, Stanford University, and **T.J. Wong**, The Chinese University of Hong Kong

Summaries of these papers may be found at: <http://www.nber.org/confer/2009/CCf09/summary.html>

Making Crime Control Pay: Cost-Effective Alternatives to Incarceration

An NBER Conference on “Making Crime Control Pay: Cost-Effective Alternatives to Incarceration” took place at the University of California, Berkeley’s School of Law on January 15 and 16, 2010. NBER Research Associates Philip Cook of Duke University and Jens Ludwig of the University of Chicago, and NBER Faculty Research Fellow Justin McCrary of Berkeley’s Law School, organized the meeting and chose these papers for discussion:

- **Steven N. Durlauf**, University of Wisconsin, Madison and NBER, and **Daniel S. Nagin**, Carnegie Mellon University, “The Deterrent Effect of Imprisonment”
- **Justin McCrary**, “Possible Gains from Reallocating within the Criminal Justice System”
- **Anne Piehl**, Rutgers University and NBER, and **Geoffrey F. Williams**, Rutgers University, “Institutional Requirements for Effective Imposition of Fines”
- **Jeffrey Grogger** and **Jonathan Guryan**, University of Chicago and NBER; and **Patrick Hill**, **Brent Roberts**, and **Karen Sixkiller**, University of Illinois, Urbana-Champaign, “Decreasing Delinquency, Criminal Behavior, and Recidivism by Intervening on Psychological Factors other than Cognitive Ability: A Review of the Intervention Literature”
- **Steve Raphael**, University of California, Berkeley, “Improving Employment Opportunities for Former Prison Inmates: Changes and Policy”
- **Sara B. Heller**, University of Chicago; **Brian A. Jacob**, University of Michigan and NBER; and **Jens Ludwig**, “Transfer Programs and Crime”
- **Lance Lochner**, University of Western Ontario, “Education Policy and Crime”
- **Christopher Carpenter**, University of California, Irvine and NBER, and **Carlos Dobkin**, University of California, Santa Cruz and NBER, “Alcohol Regulation and Crime”
- **Seth G. Sanders**, Duke University, “Crime and the Family: Lessons from Teen Childbearing”
- **John J. Donohue III**, Yale University and NBER, and **Benjamin Ewing** and **David Peloquin**, Yale University, “Rethinking America’s Illegal Drug Policy”
- **Harold Pollack**, University of Chicago; **Peter Reuter**, University of Maryland; and **Peter Sevigny**, University of South Carolina, “If Drug Treatment Works so Well, Why Are so many Drug Users in Prison?”
- **Richard G. Frank**, Harvard University and NBER, and **Thomas G. McGuire**, Harvard University, “Mental Health Treatment and Criminal Justice Outcomes”
- **Phillip J. Cook**, and **John MacDonald**, University of Pennsylvania, “Mobilizing Private Inputs for Crime Prevention”

Summaries of these papers may be found at: <http://www.nber.org/confer/2010/CRIs10/summary.html>

Eleventh Annual Conference in India

On January 17 and 18, 2010 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 that united NBER researchers with a number of economists from Indian universities, research institutions, and government departments. NBER Research Associates **Abhijit Banerjee** of MIT and **Raghuram Rajan** of the University of Chicago organized the conference jointly with **Isher Ahluwalia** of ICRIER.

The NBER participants, in addition to the organizers, were: **Martin S. Feldstein**, **Edward Glaeser**, **Rohini Pande**, and **Jeremy C. Stein**, Harvard University; **Severin Borenstein** and **Catherine Wolfram**, University of California, Berkeley; **Karthik Muralidharan**, University of California, San Diego; and NBER Board member **Jadgish N. Bhagwati** of Columbia University.

The topics discussed included the global financial crisis, the state of the Indian economy, the economics of affirmative action, economic aspects of environmental policy and urbanization, and the delivery of public services in India.

NBER News

NBER Celebrates 90 Years

January 2010 marked the ninetieth anniversary of the founding of the NBER. On December 29, 1919, six economists — T.S. Adams (Yale University), John R. Commons (University of Wisconsin), Wesley Clair Mitchell (Columbia University), Malcolm Rorty (AT&T), Nachum Stone, and Allyn Young (Cornell University) — met at the LaSalle Hotel in Chicago during the annual meeting of the American Economics Association to draft the bylaws of a new organization that would conduct timely research on important economic issues. Several weeks later, on January 23, 1920, that new organization — the National Bureau of Economic Research (NBER) — was chartered as a nonprofit corporation doing business in New York. Edwin Gay, who was NBER's first president, was also the first Dean of the Harvard Business School. Wesley Clair Mitchell was the NBER's first Director of Research.

The NBER's charter set a lofty goal for the organization: "to encourage, in the broadest and most liberal manner, investigation, research and discovery, and the application of knowledge to the well-being of mankind." A later section of the charter provided a bit more specific guidance: "to conduct, or assist in the making of, exact and impartial investigations in the fields of economic, social, and industrial science." The NBER remains dedicated to this important objective.

The Cambridge staff celebrated this NBER milestone with a cake decorated to commemorate the historical chronology of NBER business cycle dates.

2009 Awards and Honors

A number of NBER researchers received honors, awards, and other forms of professional recognition during 2009 and early 2010. A list of these honors, excluding those that were bestowed by the researcher's home university and listing researchers in alphabetical order, is presented below.

Viral Acharya won the Viz Risk Management Prize on Energy Markets, Securities, and Prices at the European Finance Association meetings for "Limits to Arbitrage and Hedging: Evidence from Commodity Markets," which was co-authored by Lars Lochstoer and Tarun Ramadorai. He also received the III Jaime Fernandez de Araoz Corporate Finance Best Paper Award for "The Internal Governance of Firms," which was co-authored by **Stewart Myers** and

Raghuram G. Rajan, and a Distinguished Referee Award from the *Review of Financial Studies*.

Douglas Almond won a 5-year NSF CAREER Award for “Health Determinants and Research Design.” The Faculty Early Career Development (CAREER) Program is an NSF-wide activity that supports the early career-development activities of those teacher-scholars who most effectively integrate research and education within the context of the mission of their organization.

Lee J. Alston was a Rockefeller Fellow at the Bellagio Study and Conference Center in 2009–2010 and a Visiting Research Fellow at the Australian National University in 2009.

Pol Antràs won the Fundación Banco Herrero Prize, awarded annually to a Spanish social scientist under age 40.

Anirban Basu received the Bernie O’Brien New Investigator Award from the International Society for Pharmacoeconomics and Outcomes Research; was Labelle Lecturer in Health Services Research at McMaster University; and won the Society for Medical Decision Making Comparative Effectiveness Research Essay Contest.

Marco Battaglini was awarded the Carlo Alberto Medal, presented to an Italian economist under the age of 40 for his/her outstanding research contributions to the field of economics. He also received the Michael Wallerstein Award from the American Political Science Association for best article published in 2008 in the area of political economy (jointly awarded with **Stephen Coate**).

Roland Benabou delivered the *Francois-Albert Angers Lecture* at the Annual Congress of the Societé Canadienne de Sciences Economiques, in Saint-Adele, Canada in May 2009 and the *7th Toulouse Lectures* at the Toulouse School of Economics, France, in December 2009.

Efraim Benmelech received an NSF CAREER Award for “The Causes and Consequences of Financial Distress.”

David G. Blanchflower was awarded an Honorary Doctor of Science (DSc)

from Queen Mary, University of London, his undergraduate alma mater.

Markus K. Brunnermeier received the German Bernacer Prize, given annually to European economists under the age of 40 who have made outstanding contributions in the fields of macroeconomics and finance.

John Y. Campbell was awarded Doctor honoris causa degrees from the University of Maastricht and the University of Paris-Dauphine and became a Corresponding Fellow of the British Academy.

Bruce Carlin won the 2009 Swiss Finance Institute Award for the best paper of the year for his paper with Gustavo Manso entitled “Obfuscation, Learning, and the Evolution of Investor Sophistication.”

Anne Case became a Fellow of the Econometric Society in 2009.

John H. Cochrane was elected president of the American Finance Association.

Lauren Cohen won an NSF CAREER Grant for her work on relationships in finance.

Courtney Coile joined the Board of Editors of the *Journal of Pension Economics and Finance*.

Janet Currie was elected to the post of Vice-President of the American Economic Association for 2010.

Angus S. Deaton received the John Kenneth Galbraith Award from the Agricultural and Applied Economics Association Foundation and became an honorary fellow of Fitzwilliam College, Cambridge. He was also president of the American Economic Association in 2009.

Stefano DellaVigna became co-editor of the *Journal of the European Economic Association* (JEEA) in June 2009.

Erwin Diewert was elected a Distinguished Fellow of the American Economic Society.

John J. Donohue was elected to the American Academy of Arts and Sciences in 2009.

Susan Dynarski received the Robert P. Huff Golden Quill Award from the National Association of Student Financial

Aid Administrators for her contributions to the literature on student financial aid.

Ronald G. Ehrenberg was nominated by New York Governor David Paterson in May 2009 for a term on the SUNY (State University of New York) Board of Trustees.

Barry Eichengreen received the 2009 Schumpeter Prize of the International Schumpeter Society. Previous winners include Romano Prodi and Vaclav Klaus.

Hanming Fang and Dan Silverman won the International Health Economics Association’s 17th Kenneth Arrow Award for the Best Paper in Health Economics published in 2008 for their paper, “Sources of Advantageous Selection: Evidence from the Medigap Insurance Market.” This paper, which was written with Michael Keane, was published in the *Journal of Political Economy* in April 2008.

Henry Farber was selected as a Fellow of the Labor and Employment Relations Association for 2010 for his lifetime contributions to research on the employment relationship. Only three academics are elected each year across all disciplines.

Niall Ferguson’s documentary series “The Ascent of Money” (PBS) was awarded the International Emmy for Best Documentary.

Amy Finkelstein was elected to the Institute of Medicine.

Kristin J. Forbes has been selected as a member of the Council of Economic Advisers for the state of Massachusetts, a member of the Congressional Budget Office’s Panel of Economic Advisers, and a lifetime member of the Council on Foreign Relations.

Nicola Fuchs-Schendeln received the SOEP-Prize for Best Scientific Publication based on the German Socio-Economic Panel, which is awarded by the German Institute for Economic Research.

Don Fullerton addressed the 27 Finance Ministers of the European Union about a possible EU carbon tax at their informal “Ecofin” meeting in Gothenberg, Sweden. He was also Keynote Speaker at larger conference of 500 policymakers from those 27 countries in Brussels, Belgium.

Xavier Gabaix won the “best paper award” from the Financial Research Association for “Dynamic Incentive Accounts” (with A. Edmans, T. Sadzik, and Y. Sannikov.)

Alan Garber received the Rock Carling Fellowship from Nuffield Trust (U.K.) and a Career Achievement Award from the Society for Medical Decision Making.

Matthew Gentzkow is a 2009 Alfred P. Sloan Research Fellow.

Robert Gibbons became a fellow of the American Academy of Arts and Sciences.

Linda S. Goldberg has been appointed a member of the board of the Committee on the Status of Women in the Economics Profession, part of the American Economic Association, beginning January 1, 2010.

Claudia Goldin won the John R. Commons Award from the Omicron Delta Epsilon International Honor Society for Economics, a biennial award for career accomplishments. She also received the Mincer Prize from the Society of Labor Economists (SOLE) for career achievement in the field of Labor Economics.

Gene M. Grossman was awarded an Honorary Doctor of Economics from University of St. Gallen, Switzerland.

Michael Grossman is President of the American Society of Health Economists.

Sanford J. Grossman received the 2009 CME Group-MSRI Prize in Innovative Quantitative Applications for “Innovative Approaches to Asset Pricing Models.”

Jonathan Guryan received the John T. Dunlop Award for Outstanding Research of National Significance on Labor Issues from the Labor and Employment Relations Association. The award is given to a labor economist within ten years of his/her terminal degree. He was honored for his work on discrimination by race and gender.

Robert E. Hall was President-Elect of the American Economic Association in 2009.

Oliver Hart was awarded honorary doctorates from Copenhagen Business School and the University of Paris-Dauphine.

Michael C. Jensen received the Morgan Stanley and American Finance Association 2009 Award for Excellence in Financial Economics.

Marcin Kacperczyk received the Q-Group (The Institute for Quantitative Research in Finance) Research Award.

Edward J. Kane won the Warren Samuels Prize for the best paper presented at the Annual Meeting of the Association for Social Economics.

Lawrence F. Katz received the 2009 Susan C. Eaton Outstanding Scholar-Practitioner Award from the Labor and Employment Relations Association in recognition of outstanding research, teaching, and practice on labor and employment issues. Also, he and co-author **Claudia Goldin** won two major awards for their book *The Race between Education and Technology*: the 2009 Richard A. Lester Award for the Outstanding Book in Industrial Relations and Labor Economics and the R.R. Hawkins Award of the American Association of Publishers for the most Outstanding Professional, Reference, or Scholarly Work of 2008.

Ryan Kellogg and co-author Hendrik Wolff received the 2009 Ralph C. d’Arge and Allen V. Kneese Award for Outstanding Publication in the *Journal of Environmental Economics and Management* for “Daylight Time and Energy: Evidence from an Australian Experiment.”

William Kerr was awarded the Kauffman Foundation Junior Faculty Fellowship in Entrepreneurship Research.

Charles D. Kolstad was elected a fellow of the Association of Environmental and Resource Economists.

Amanda Kowalski received the 2009 Zellner Thesis Award in Business and Economic Statistics.

Elisabeth Kremp received the honor of Chevalier de l’Ordre National du Mérite. Jean Paul Betbeze presented the award at a ceremony held at the Bank of France.

Darius Lakdawalla and his co-authors **Dana Goldman**, Pierre-Carl Michaud, **Neeraj Sood**, Robert Lempert, Ze Cong, Han de Vries, and Italo Gutierrez received the Garfield Economic Impact Award for

“U.S. Pharmaceutical Policy in a Global Marketplace” published earlier this year in *Health Affairs*.

Naomi R. Lamoreaux is president of the Economic History Association. She was also awarded the Clio “Can” for Exceptional Support to the Field of Cliometrics.

David S. Lee won the 2009 D. J. Aigner award for “Randomized Experiments from Non-random Selection in U.S. House Elections.” This honor is given to the most significant applied paper published in the *Journal of Econometrics* in 2007 and 2008.

Steven Lehrer received the second Victor R. Fuchs Research Award for the best research paper with the potential to spawn new research in an underdeveloped area of health economics or health policy.

Josh Lerner won Second Prize in the Fama/DFA Prizes for Capital Markets and Asset Pricing from the *Journal of Financial Economics*. He also received an Honorary Doctorate from the Technical University of Munich.

Annamaria Lusardi, **Olivia S. Mitchell**, and Arie Kapteyn received a \$3.1 million grant from the Social Security Administration to create a Financial Literacy Center (FLC), which officially began operations on October 1, 2009.

Charles F. Manski was elected a member of the National Academy of Sciences.

Sara Markowitz and Erdal Tekin were first runners-up for the Georgescu-Roegen Prize, awarded each year by the Southern Economic Association for the best academic article published in the *Southern Economic Journal*. Their winning article was “The Relationship between Suicidal Behavior and Productive Activities of Young Adults.”

Alexandre Mas is a Sloan Research Fellow. He also received the IZA (The Institute for the Study of Labor) Young Labor Economist Award.

Kevin Milligan and his co-authors **Jon Gruber** and **Michael Baker** won the Doug Purvis Memorial Prize, an “annual prize for a highly significant, written contribution to some issue related to

Canadian economic policy in the previous year” for their paper, “Universal Child Care, Maternal Labor Supply, and Family Well Being.” It was published in the *Journal of Political Economy* in 2008.

Jeffrey A. Miron received the Alfred R. Lindesmith for Achievement in the Field of Scholarship from the Drug Policy Alliance.

Kris James Mitchener is a National Fellow of the Hoover Institution in 2009–10.

Naci Mocan received the “2008 Best Article Award” from *Economic Inquiry* for “What Determines Corruption? International Evidence from Micro Data.”

Robert Moffitt received a Guggenheim Fellowship for the academic year 2009–10 to study “The Growth of Volatility in the U.S. Labor Market.”

Dale T. Mortensen became a Distinguished Fellow of the American Economic Association in January 2009.

David Neumark and William Wascher were co-authors of *Minimum Wages* (MIT Press), which was recognized as an Outstanding Academic title in 2009 by *Choice* (one of 26 titles in economics).

Joseph P. Newhouse received the 2009 Adam Yarmolinsky Medal. The Medal is awarded to a member of the Institute of Medicine from a discipline outside of the health and medical sciences, recognizing distinguished service over a significant period of time.

Nathan Nunn was selected a 2009–10 Alfred P. Sloan Research Fellow.

Kevin H. O’Rourke was elected to Membership of the Royal Irish Academy. He also was awarded a European Research Council Advanced Investigator Grant.

Paul Oyer won the Brattle Distinguished Paper Prize for the outstanding paper on Corporate Finance in the *Journal of Finance*.

Thomas Philippon won the Prize for Best Young French Economist (Cercle des économistes/ Le Monde) in 2009.

James M. Poterba served as Vice-President of the American Economic Association and as President of the National Tax Association in 2009.

Manju Puri won a Best Paper Award

(2nd prize) at the Business Models in Business Conference, Bocconi University, Milan, Italy, for “The Impact of the U.S. Financial Crisis on Global Retail Lending,” co-authored by Jorg Rocholl and Sascha Steffen.

James E. Rauch has been chosen to present the Nottingham Lectures in International Economics this year.

Harvey S. Rosen received the H.S. Warwick Research Award in Alumni Relations for Educational Advancement.

Andrew Samwick was selected as the New Hampshire Professor of the Year by the Carnegie Foundation for the Advancement of Teaching and the Council for the Advancement and Support of Education (CASE). The U.S. Professors of the Year program salutes the most outstanding undergraduate instructors in the country—those who excel in teaching and positively influence the lives and careers of students.

Antoinette Schoar won the Ewing Marion Kauffman Prize Medal for Distinguished Research in Entrepreneurship. The Kauffman Foundation established this prize for in 2005 to inspire promising young scholars to contribute new insight into the field of entrepreneurship. The Medal is awarded every two years to one scholar under age 40.

G. William Schwert was elected a Fellow of the Financial Management Association in October 2009.

Robert Shiller won the third Deutsche Bank Prize in Financial Economics, awarded every other year. He also received the Paul A. Samuelson TIAA-CREF Award for his book *Animal Spirits* (with George Akerlof), awarded at the ASSA Meetings in January 2010.

Pablo T. Spiller became editor-in-chief of the *Journal of Law Economics and Organization* and President of the International Society of New Institutional Economics.

Robert N. Stavins was inducted as a Fellow of the Association of Environmental Economists in January 2010 at the ASSA meetings in Atlanta.

Richard H. Steckel was President of the Economic History Association in 2008–9.

Per Strömberg and **Michael Weisbach** won the Brattle Group First Prize for best corporate finance paper published in the *Journal of Finance* for “Why Are Buyouts Levered? The Financial Structure of Private Equity Funds” joint with Ulf Axelson.

Richard Sylla was re-elected vice chairman of the Board of Trustees of the Museum of American Finance in New York City. He was also appointed to the National Advisory Committee of the Hamilton Partnership for Paterson, a non-profit organization that will help launch the new Paterson (NJ) Great Falls National Historical Park.

Alan M. Taylor was appointed to a Houblon-Norman/George Fellowship at The Bank of England.

Michele Tertilt was selected as a 2009 Alfred P. Sloan Research Fellow.

Sheridan Titman was elected Vice President of the American Finance Association.

John VanReenen was the winner of the 2009 Yrjö Jahnsson Award from the European Economics Association for best economist under the age of 45 “who has made a contribution that is significant to economics in Europe.” It is the most prestigious award in European economics, the European equivalent to the John Bates Clark Medal.

Laura Veldkamp, **Marcin Kacperczyk**, and **Stijn Van Nieuwerburgh** were awarded a \$10,000 research grant from the Q-group for work on “Attention Allocation over the Business Cycle.”

Michelle White was President of the American Law and Economics Association in 2009.

Lu Zhang received an Inaugural Distinguished Referee Award from *Review of Financial Studies* for 2009.

Luigi Zingales, **Luigi Guiso**, and **Paola Sapienza** won the Smith Breeden distinguished paper award of the American Finance Association for their article, “Trusting the Stock Market.”

Program and Working Group Meetings

Entrepreneurship

The NBER's Working Group on Entrepreneurship met in Cambridge on December 11, 2009. Directors Josh Lerner, Harvard Business School, and Antoinette Schoar, MIT's Sloan School, organized the meeting. These papers were discussed:

- **Robert W. Fairlie**, University of California, Santa Cruz, and **Kanika Kapur** and **Susan Gates**, RAND, "Is Employer-Based Health Insurance a Barrier to Entrepreneurship?"
- **Meghana Ayyagari**, George Washington University; **Asli Demirgüç-Kunt**, The World Bank; and **Vojislav Maksimovic**, University of Maryland, "Are Innovating Firms Victims or Perpetrators? Tax Evasion, Bribe Payments and the Role of External Finance in Developing Countries"
- **Thomas Astebro**, HEC, Paris; **Jose Mata**, Universidade Nova de Lisboa, and **Luis Santos-Pinto**, University of Lausanne, "Preference for Skew in Lotteries: Evidence from the Laboratory"
- **Amitay Alter**, Washington University in St. Louis, "The Organization of Venture Capital Firms"
- **Xuan Tian**, Indiana University, and **Tracy Y. Wang**, University of Minnesota, "Tolerance for Failure and Corporate Innovation"
- **Ola Bengtsson**, Cornell University, and **S. Abraham Ravid**, Rutgers University, "Geography and Financial Contracts"
- **Mercedes Delgado**, Temple University; **Michael E. Porter**, Harvard University; and **Scott Stern**, Northwestern University and NBER, "Clusters and Entrepreneurship"

Summaries of these papers may be found at: <http://www.nber.org/confer/2009/ENTf09/summary.html>

Economic Growth Workshop

An NBER workshop on Economic Growth, organized by Francisco J. Buera, NBER and University of California, Los Angeles, and James Feyrer, NBER and Dartmouth College, took place on February 4, 2010 at the Federal Reserve Bank of San Francisco. These topics were discussed:

- "Colonies"
Matthias Doepke, Northwestern University and NBER, and **Andrea Eisfeldt**, Northwestern University
- "The Agricultural Basis of Comparative Development"
Dietrich Vollrath, University of Houston
- "The Size Distribution of Farms and International Productivity Differences"
Tasso Adamopoulos, York University, and **Diego Restuccia**, University of Toronto

- “Two Perspectives on Preferences and Structural Transformation” (NBER Working Paper No. 15416)
Berthold Herrendorf, Arizona State University; **Richard Rogerson**, Arizona State University and NBER; and **Akos Valentinyi**, Magyar Nemzeti Bank
- “Do Better Schools Lead to More Growth? Cognitive Skills, Economic Outcomes, and Causation”
Eric A. Hanushek, Stanford University and NBER, and **Ludger Woessmann**, University of Munich
- “An Equilibrium Model of the African HIV/AIDS Epidemic”
Jeremy Greenwood, University of Pennsylvania and NBER; **Philipp Kircher**, University of Pennsylvania; and **Michele Tertilt**, Stanford University and NBER

Summaries of these papers may be found at: <http://www.nber.org/confer/2010/EGC10/summary.html>

Economic Fluctuations and Growth Research Meeting

The NBER's Program on Economic Fluctuations and Growth met at the Federal Reserve Bank of San Francisco on February 5, 2010. NBER Research Associates Andrew Atkeson of University of California, Los Angeles and Harald Uhlig of the University of Chicago organized the meeting. These papers were discussed:

- **Francois Gourio**, Boston University and NBER, “Disaster Risk and Business Cycles”
- **Veronica Guerrieri** and **Erik Hurst**, University of Chicago and NBER, and **Daniel Hartley**, Federal Reserve Bank of Cleveland, “Endogenous Gentrification and Housing Price Dynamics”
- **Jack Favilukis**, London School of Economics, and **Sydney C. Ludvigson** and **Stijn Van Nieuwerburgh**, New York University and NBER, “The Macroeconomic Effects of Housing Wealth, Housing Finance, and Limited Risk-Sharing in General Equilibrium”
- **YiLi Chien**, Purdue University; **Harold Cole**, University of Pennsylvania and NBER; and **Hanno Lustig**, University of California, Los Angeles and NBER, “Is the Volatility of the Market Price of Risk due to Intermittent Portfolio Re-Balancing?”
- **Ricardo Lagos**, New York University; **Guillaume Rocheteau**, University of California, Irvine; and **Pierre-Olivier Weill**, University of California, Los Angeles and NBER, “Crises and Liquidity in Over-the-Counter Markets”
- **Christopher J. Erceg** and **Jesper Linde**, Federal Reserve Board, “Is There a Fiscal Free Lunch in a Liquidity Trap?”

Summaries of these papers may be found at: <http://www.nber.org/confer/2010/EFGw10/summary.html>

Industrial Organization Program Meeting

The NBER's Program on Industrial Organization, directed by Nancy Rose of MIT, met in Stanford, CA on February 19 and 20, 2010. Justine S. Hastings, NBER and Yale University, and Stephen P. Ryan, NBER and MIT, organized the meeting. These papers were discussed:

- **Ali Hortacsu** and **Chad Syverson**, University of Chicago and NBER; **Gregor Matvos**, University of Chicago; and **Sriram Venkataraman**, Emory University, "Are Consumers Affected by Durable Goods Makers' Financial Distress? The Case of Auto Manufacturers"
- **Francesco Decarolis**, University of Chicago, "When the Highest Bidder Loses the Auction: Theory and Evidence from Public Procurement"
- **Severin Borenstein**, University of California, Berkeley and NBER, "The Redistributive Impact of Non-Linear Electricity Pricing"
- **Ginger Z. Jin**, University of Maryland and NBER, and **Seth M. Freedman**, University of Maryland, "Learning by Doing with Asymmetric Information: Evidence from Prosper.com"
- **Susan Athey**, Harvard University and NBER, and **Denis Nekipelov**, University of California, Berkeley, "A Structural Model of Sponsored Search Advertising Auctions"
- **Katja Seim**, University of Pennsylvania, and **Joel Waldfogel**, University of Pennsylvania and NBER, "Public Monopoly and Economic Efficiency: Evidence from the Pennsylvania Liquor Control Board's Entry Decisions"
- **Igal Hendel** and **Aviv Nevo**, Northwestern University and NBER, "A Simple Model of Demand Anticipation"

Summaries of these papers may be found at: <http://www.nber.org/confer/2009/IOs09/summary.html>

Development of the American Economy Program Meeting

The NBER's Program on the Development of the American Economy, directed by Claudia Goldin of Harvard University, met in Cambridge on February 27, 2010. These topics were discussed:

- **Nathan Nunn**, Stanford University and NBER; **William Easterly**, New York and NBER; **Daniel Berger** and **Shanker Satyanath**, New York University, "Commercial Imperialism? Political Influence and Trade during the Cold War"
- **Moritz Schularick**, Free University of Berlin, and **Alan M. Taylor**, University of California, Davis and NBER, "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles and Financial Crises, 1870 to 2008" (NBER Working Paper No. 15512)
- **Eugene N. White**, Rutgers University and NBER, "Lessons from the Great American Real Estate Boom and Bust of the 1920s" (NBER Working Paper No. 15573)
- **Kenneth Snowden**, University of North Carolina, Greensboro, "The Anatomy of a Residential Mortgage Crisis: A Look Back to the 1930s"

- **Werner Troesken**, University of Pittsburgh and NBER, “The Elasticity of Demand with Respect to Product Failures; or Why the Market for Quack Medicines Flourished for More Than 150 years”(NBER Working Paper No. 15699)
- **Zeynep K. Hansen**, Boise State University and NBER, **Gary D. Libecap**, University of California, Santa Barbara and NBER, and **Scott E. Lowe**, Boise State University, “Climate Variability and Water Infrastructure: Historical Experience in the Western United States”(NBER Working Paper No. 15558)

Summaries of these papers may be found at: <http://www.nber.org/confer/2010/DAEs10/summary.html>

NBER Meeting on Agricultural Economics and Biofuels

Former NBER Director Jeffrey M. Perloff of the University of California, Berkeley, organized a meeting on Agricultural Economics and Biofuels, which took place in Cambridge on March 4 and 5, 2010. These papers were discussed:

- **John Beghin**, Iowa State University and INRA France; and **Anne-Celia Disdier** and **Stephan Marette**, INRA France and AgroParisTech, “The Economics and Potential Protectionism of Food Safety Standards and Inspections: An Application to the U.S. Shrimp Market”
- **Rachel E. Goodhue**, University of California, Davis, and **Carlo Russo**, Università di Cassino, “Modeling Processor Market Power and the Incidence of Agricultural Policy: An Exploratory Approach to the Behavioral Model Selection Process”
- **Barry Goodwin**, North Carolina State University; **Ashok K. Mishra**, Louisiana State University, and **Francois Ortalo-Magne**, University of Wisconsin, “The Buck Stops Where? The Distribution of Agricultural Subsidies”
- **Jeffrey T. LaFrance**, Washington State University; **Rulon Pope**, Brigham Young University; and **Jesse Tack**, Mississippi State University, “Risk Response in Agriculture”
- **Bruce A. Babcock**, Iowa State University, “The Politics and Economics of the U.S. Crop Insurance Program”
- **Ethan Ligon**, University of California, Berkeley, “Demand for and Effects of Specialty Crop Insurance”
- **Michael J. Roberts**, North Carolina State University, and **Wolfram Schlenker**, Columbia University and NBER, “The U.S. Biofuel Mandate and World Food Prices: An Econometric Analysis of the Demand and Supply of Calories”
- **Xiaoguang Chen**, **Haixiao Huang**, **Madhu Khanna**, and **Hayri Onal**, University of Illinois, Urbana-Champaign, “Meeting the Mandate for Biofuels: Implications for Land Use, Greenhouse Gas Emissions and Social Welfare”
- **Thomas W. Hertel** and **Jayson Beckman**, Economic Research Service, Department of Agriculture, “Commodity Price Volatility in the Biofuel Era: An Examination of the Linkage between Energy and Agricultural Markets”
- **Steven Sexton** and **David Zilberman**, University of California, Berkeley, “The Economics of Agricultural Biotechnology Adoption: Implications for Biofuel Sustainability”

Summaries of these papers may be found at: <http://www.nber.org/confer/2010/AGs1010/summary.html>

Monetary Economics

Members and guests of the NBER's Program on Monetary Economics met on March 5, 2010 at the Federal Reserve Bank of New York. Mark Gertler, NBER and New York University, and Emi Nakamura, NBER and Columbia Business School, organized the meeting. These papers were discussed:

- **Martin Ellison**, University of Oxford, and **Thomas J. Sargent**, New York University and NBER, "A Defense of the FOMC"
- **V.V. Chari**, University of Minnesota and NBER, and **Patrick Kehoe**, Federal Reserve Bank of Minneapolis and NBER, "Bailouts, Time Inconsistency, and Optimal Regulation"
- **Pietro Veronesi** and **Luigi Zingales**, University of Chicago and NBER, "Paulson's Gift" (NBER Working Paper No. 15458)
- **Markus K. Brunnermeier**, Princeton University and NBER, and **Yuliy Sannikov**, Princeton University, "A Macroeconomic Model with a Financial Sector"
- **Mary Amiti**, Federal Reserve Bank of New York, and **David Weinstein**, Columbia University and NBER, "Exports and Financial Shocks" (NBER Working Paper No. 15556)
- **Marco Del Negro**, **Gauti Eggertsson**, **Andrea Ferrero**, Federal Reserve Bank of New York, and **Nobuhiro Kiyotaki**, Princeton University and NBER, "The Great Escape: A Quantitative Evaluation of the Fed's Non-Standard Policies Response to the Crisis"

Summaries of these papers may be found at: <http://www.nber.org/confer/2010/MEs10/summary.html>

Technological Progress and Productivity Measurement

The NBER's Program on Technological Progress and Productivity Measurement met in Cambridge on March 5, 2010. Program Director Ernst R. Berndt of MIT and NBER Research Associate David Popp of Syracuse University organized the meeting. These papers were discussed:

- **Jan DeLoecker**, Princeton University and NBER, and **Frederic Warzynski**, Aarhus University, "Markups and Firm-level Export Status"
- **Jeffrey L. Furman**, Boston University and NBER; **Fiona E. Murray**, MIT; and **Scott Stern**, Northwestern University and NBER, "Growing Stem Cells: The Impact of U.S. Policy on the Geography and Organization of Scientific Discovery"
- **Robert S. Pindyck**, MIT and NBER, and **Neng Wang**, Columbia University, "The Economic and Policy Consequences of Catastrophes"

Summaries of these papers may be found at: <http://www.nber.org/confer/2010/PRs10/summary.html>

Environmental and Energy Economics

The NBER's Environmental and Energy Economics Program met in Cambridge on March 5 and 6, 2010. Program Director Don Fullerton of the University of Illinois and NBER Research Associate David Popp of Syracuse University organized the meeting. These papers were discussed:

- **Karen Fisher-Vanden**, Pennsylvania State University; **Erin Mansur**, Yale University and NBER; and **Juliana Wang**, Yale University, "Costly Blackouts? Measuring Productivity and Environmental Effects of Electricity Shortages"
- **Suzanne Scotchmer**, University of California, Berkeley, and NBER, "Cap-and-Trade, Emissions Taxes, and Innovation"
- **Thijs Dekker** and **Cees A. Withagen**, VU University Amsterdam; **Herman R.J. Vollebergh**, Netherlands Environmental Assessment Agency; and **Frans P. De Vries**, University of Stirling, "Inciting Protocols: How International Environmental Agreements Trigger Knowledge Transfers"
- **Juan-Pablo Montero**, Pontificia Universidad Catolica de Chile, "Prices vs Quantities for the Development of Clean Technologies: The Role of Commitment"
- **Wolfram Schlenker**, Columbia University and NBER, and **W. Reed Walker**, Columbia University, "The Effect of Airports on Air Quality and Respiratory Problems"
- **David Albouy** and **Ryan Kellogg**, University of Michigan and NBER; **Walter Graf**, University of Michigan, and **Hendrik Wolff**, University of Washington, "Aversion to Extreme Temperatures, Climate Change, and Quality of Life"
- **Grant D. Jacobsen**, UC Santa Barbara, and **Matthew J. Kotchen**, Yale University and NBER, "Are Building Codes Effective at Saving Energy? Evidence from Residential Billing Data in Florida"

Summaries of these papers may be found at: <http://www.nber.org/confer/2010/EEEs10/summary.html>

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Measuring and Managing Federal Financial Risk

Measuring and Managing Federal Financial Risk, edited by Deborah J. Lucas, is available now from the University of Chicago Press for \$85.00.

Although the U.S. government is the world's largest financial institution, providing credit and assuming risk through diverse activities, there has been little understanding or measurement of the potential costs and risks of such actions

and obligations up until now. This NBER Conference Report contains new research, both empirical and methodological, on the measurement and management of these costs and risks. The analyses encompass a broad spectrum of federal programs, including housing, catastrophe insurance, student loans, social security, and environmental liabilities. Collectively, the contributions

gathered in this book demonstrate that financial economics can be a useful tool for studying a range of federal activities.

Lucas is a Research Associate in the NBER's Programs on Asset Pricing and Economic Fluctuations and Growth and a Professor of Finance at MIT's Sloan School of Management.

Research Findings in the Economics of Aging

Research Findings in the Economics of Aging, edited by David A. Wise, is available from the University of Chicago Press for \$115.00. In this NBER Conference Report, a group of leading researchers discuss such topics as work and retirement behavior, disability, and how both shape policies designed to address them. We know, for example, that although individuals choose when to retire, their deci-

sions are influenced by a set of incentives, including retirement benefit programs and health care. This volume includes cross-national analyses of the effects of such programs on these decisions. The volume also offers in-depth analysis of the effects of retirement plans, employer contributions for health insurance, and housing prices on retirement. It explores well-established relationships among eco-

nommic circumstances, health, and mortality, as well as the effects of poverty and lower levels of economic development on health and life satisfaction.

Wise is the NBER's Area Director for Aging and Health, and the John F. Stambaugh Professor of Political Economy at Harvard's Kennedy School of Government.

Social Security Programs and Retirement around the World: The Relationship to Youth Employment

Social Security Programs and Retirement around the World: The Relationship to Youth Employment, edited by Jonathan Gruber and David A. Wise, is available from the University of Chicago Press for \$110.00. This NBER Conference Report offers comparative analysis from twelve countries and examines the issue of age in the labor force. A notable group of contributors analyze: the relationship

between the incentives to retire and the proportion of older people in the workforce; the effects that reforming social security would have on the employment rates of older workers; and how extending labor force participation will affect program costs. This timely volume challenges many assumptions about the relationship between old and young people in the workforce, dispelling the myth that

employing older workers takes jobs away from the young.

Wise is NBER's Area Director for Aging and Health, and Gruber directs the NBER's Program on Health Care. Wise is also the John F. Stambaugh Professor of Political Economy at Harvard's Kennedy School of Government. Gruber is a Professor of Economics at MIT.

Agglomeration Economics

Agglomeration Economics, edited by Edward L. Glaeser, is available from the University of Chicago Press for \$99.00. When firms and people are located near each other in cities and in industrial clusters, which is termed "agglomeration," they benefit in various ways, including through reduced costs of exchanging goods and ideas. Surprisingly, even as

transportation and communication costs have fallen, cities have become increasingly important. And, even within cities, industrial clusters remain vital.

This NBER Conference Report brings together a group of essays that examine the reasons why economic activity continues to cluster together despite these falling costs. The studies here advance our

understanding of agglomeration and its implications for a globalized world.

Glaeser directs the NBER's Working Group on Urban Economics and is the Fred and Eleanor Glimp Professor of Economics at Harvard University.

NBER Macroeconomics Annual 2009, Volume 24

NBER Macroeconomics Annual 2009, Volume 24, edited by Daron Acemoglu, Kenneth Rogoff, and Michael Woodford, is available from the University of Chicago Press Journals Division. The papers and accompanying discussions in this volume address how heterogeneous beliefs interact with equilibrium leverage and potentially lead to leverage cycles, the validity of alternative hypotheses about the reason for the recent increase in foreclosures on residential mortgages, the credit rating crisis, quantitative implications for the

evolution of the U.S. wage distribution, and noisy business cycles.

All three editors are Research Associates in the NBER's Program on Economic Fluctuations and Growth. Acemoglu is also the Charles P. Kindleberger Professor of Applied Economics at MIT. Rogoff is the Thomas D. Cabot Professor of Public Policy at Harvard University. Woodford is the John Bates Clark Professor of Political Economy at Columbia University.

The cloth bound volume is priced

at \$90.00; the paperback is \$60.00. The volume is also available electronically for \$50.00 (individual) or \$25.00 (student). To order by telephone, call Monday through Friday, 8 am to 5 pm Central Time, (773) 753-3347; or toll-free in the U.S. and Canada, (877) 705-1878. To order by mail, the address is: University of Chicago Distribution Center, 11030 South Langley Avenue, Chicago, IL 60628, (773) 702-7000

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