# Literature Report

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**Abstract**

## Immigrants, Productivity, and Labor Markets

- Journal of Economic Perspectives---2016---Giovanni Peri

Immigration has been a steady force acting on population and employment within countries throughout human history. Focusing on the last four decades, we show that the mix of immigrants to rich countries has been, overall, rather balanced between college and noncollege educated. The growth of immigration has been driven by immigrants from nonrich countries. The economic impact of immigration on receiving economies needs to be understood by analyzing the specific skills brought by immigrants. The complementarity and substitutability between immigrants and natives in employment, and the response of receiving economies in terms of specialization and technological choices, are important when considering the general equilibrium effects of immigration. In the United States, a balanced composition of immigrants between college and noncollege educated, together with the adjustment of demand and technology, imply that general equilibrium effects on relative and absolute wages have been small.

## The Impact of Immigration: Why Do Studies Reach Such Different Results?

- Journal of Economic Perspectives---2016---Christian Dustmann,Uta Schönberg,Jan Stuhler,Uta Schoenberg

We classify the empirical literature on the wage impact of immigration into three groups, where studies in the first two groups estimate different relative effects, and studies in the third group estimate the total effect of immigration on wages. We interpret the estimates obtained from the different approaches through the lens of the canonical model to demonstrate that they are not comparable. We then relax two key assumptions in this literature, allowing for inelastic and heterogeneous labor supply elasticities of natives and the "downgrading" of immigrants. "Downgrading" occurs when the position of immigrants in the labor market is systematically lower than the position of natives with the same observed education and experience levels. Downgrading means that immigrants receive lower returns to the same measured skills than natives when these skills are acquired in their country of origin. We show that heterogeneous labor supply elasticities, if ignored, may complicate the interpretation of wage estimates, and particularly the interpretation of relative wage effects. Moreover, downgrading may lead to biased estimates in those approaches that estimate relative effects of immigration, but not in approaches that estimate total effects. We conclude that empirical models that estimate total effects not only answer important policy questions, but are also more robust to alternative assumptions than models that estimate relative effects.

### Is the Mediterranean the New Rio Grande? US and EU Immigration Pressures in the Long Run

- Journal of Economic Perspectives---2016---Gordon Hanson,Craig McIntosh

How will worldwide changes in population affect pressures for international migration in the future? We examine the past three decades, during which population pressures contributed to substantial labor flows from neighboring countries into the United States and Europe, and contrast them with the coming three decades, which will see sharp reductions in labor-supply growth in Latin America but not in Africa or much of the Middle East. Using a gravity-style empirical model, we examine the contribution of changes in relative labor-supply to bilateral migration in the 2000s and then apply this model to project future bilateral flows based on long-run UN forecasts of working-age populations in sending and receiving countries. Because the Americas are entering an era of uniformly low population growth, labor flows across the Rio Grande are projected to slow markedly. Europe, in contrast, will face substantial demographically driven migration pressures from across the Mediterranean for decades to come. Although these projected inflows would triple the first-generation immigrant stocks of larger European countries between 2010 and 2040, they would still absorb only a small fraction of the 800-million-person increase in the working-age population of Sub-Saharan Africa that is projected to occur over this period.

### Global Talent Flows

- Journal of Economic Perspectives---2016---Sari Pekkala Kerr,William Kerr,Çağlar Özden,Christopher Parsons

Highly skilled workers play a central and starring role in today's knowledge economy. Talented individuals make exceptional direct contributions--including breakthrough innovations and scientific discoveries--and coordinate and guide the actions of many others, propelling the knowledge frontier and spurring economic growth. In this process, the mobility of skilled workers becomes critical to enhancing productivity. Substantial attention has been paid to understanding the worldwide distribution of talent and how global migration flows further tilt the deck. Using newly available data, we first review the landscape of global talent mobility. We next consider the determinants of global talent flows at the individual and firm levels and sketch some important implications. Third, we review the national gatekeepers for skilled migration and broad differences in approaches used to select migrants for admission. Looking forward, the capacity of people, firms, and countries to successfully navigate this tangled web of global talent will be critical to their success.

### Game Theory in Economics and Beyond

- Journal of Economic Perspectives---2016---Larry Samuelson

Within economics, game theory occupied a rather isolated niche in the 1960s and 1970s. It was pursued by people who were known specifically as game theorists and who did almost nothing but game theory, while other economists had little idea what game theory was. Game theory is now a standard tool in economics. Contributions to game theory are made by economists across the spectrum of fields and interests, and economists regularly combine work in game theory with work in other areas. Students learn the basic techniques of game theory in the first-year graduate theory core. Excitement over game theory in economics has given way to an easy familiarity. This essay first examines this transition, arguing that the initial excitement surrounding game theory has dissipated not because game theory has retreated from its initial bridgehead, but because it has extended its reach throughout economics. Next, it discusses some key challenges for game theory, including the continuing problem of dealing with multiple equilibria, the need to make game theory useful in applications, and the need to better integrate noncooperative and cooperative game theory. Finally it considers the current status and future prospects of game theory.

### New Directions for Modelling Strategic Behavior: Game-Theoretic Models of Communication, Coordination, and Cooperation in Economic Relationships

- Journal of Economic Perspectives---2016---Vincent Crawford

In this paper, I discuss the state of progress in applications of game theory in economics and try to identify possible future developments that are likely to yield further progress. To keep the topic manageable, I focus on a canonical economic problem that is inherently game-theoretic, that of fostering efficient coordination and cooperation in relationships, with particular attention to the role of communication. I begin with an overview of noncooperative game theory's principal model of behavior, Nash equilibrium. I next discuss the alternative "thinking" and "learning" rationales for how real-world actors might reach equilibrium decisions. I then review how Nash equilibrium has been used to model coordination, communication, and cooperation in relationships, and discuss possible developments

### Whither Game Theory? Towards a Theory of Learning in Games

- Journal of Economic Perspectives---2016---Drew Fudenberg,David K. Levine

Game theory has been a huge success in economics. Many important questions have been answered, and game theoretic methods are now central to much economic investigation. We suggest areas where further advances are important, and argue that models of learning are a promising route for improving and widening game theory's predictive power while preserving the successes of game theory where it already works well. We emphasize in particular the need for better understanding of the speed with which learning takes place.

### The View from Above: Applications of Satellite Data in Economics

- Journal of Economic Perspectives---2016---Dave Donaldson,Adam Storeygard

The past decade or so has seen a dramatic change in the way that economists can learn by watching our planet from above. A revolution has taken place in remote sensing and allied fields such as computer science, engineering, and geography. Petabytes of satellite imagery have become publicly accessible at increasing resolution, many algorithms for extracting meaningful social science information from these images are now routine, and modern cloud-based processing power allows these algorithms to be run at global scale. This paper seeks to introduce economists to the science of remotely sensed data, and to give a flavor of how this new source of data has been used by economists so far and what might be done in the future.

### Village and Larger Economies: The Theory and Measurement of the Townsend Thai Project

- Journal of Economic Perspectives---2016---Robert M. Townsend

I have spent close to 20 years cataloging transactions between households in Thai villages, along with a research team. Just this past summer, we documented a number of ways in which even relatively poor villages have money markets not dissimilar in some ways from New York financial markets, with borrowing and repayment passing along links in credit chains. In another project, we have been looking at month-by-month school attendance, grade level completion, and graduation for children in these villages, following them from birth to graduation. The Townsend Thai project is a theory-based data collection endeavor, measuring and mapping village and larger economies into general equilibrium frameworks. This paper reviews a number of findings, implications, applications, and lessons learned, and considers next steps.

### Diversity in the Economics Profession: A New Attack on an Old Problem

- Journal of Economic Perspectives---2016---Amanda Bayer,Cecilia Elena Rouse

The economics profession includes disproportionately few women and members of historically underrepresented racial and ethnic minority groups, relative both to the overall population and to other academic disciplines. This underrepresentation within the field of economics is present at the undergraduate level, continues into the ranks of the academy, and is barely improving over time. It likely hampers the discipline, constraining the range of issues addressed and limiting our collective ability to understand familiar issues from new and innovative perspectives. In this paper, we first present data on the numbers of women and underrepresented minority groups in the profession. We then offer an overview of current research on the reasons for the underrepresentation, highlighting evidence that may be less familiar to economists. We argue that implicit attitudes and institutional practices may be contributing to the underrepresentation of women and minorities at all stages of the pipeline, calling for new types of research and initiatives to attack the problem. We then review evidence on how diversity affects productivity and propose remedial interventions as well as findings on effectiveness. We identify several promising practices, programs, and areas for future research.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2016---Timothy Taylor

### The Importance of School Systems: Evidence from International Differences in Student Achievement

- Journal of Economic Perspectives---2016---Ludger Woessmann

Students in some countries do far better on international achievement tests than students in other countries. Is this all due to differences in what students bring with them to school--socioeconomic background, cultural factors, and the like? Or do school systems make a difference? This essay argues that differences in features of countries' school systems, and in particular their institutional structures, account for a substantial part of the cross-country variation in student achievement. It first documents the size and cross-test consistency of international differences in student achievement. Next, it uses the framework of an education production function to provide descriptive analysis of the extent to which different factors of the school system, as well as factors beyond the school system, account for cross-country achievement differences. Finally, it covers research that goes beyond descriptive associations by addressing leading concerns of bias in cross-country analysis. The available evidence suggests that differences in expenditures and class size play a limited role in explaining cross-country achievement differences, but that differences in teacher quality and instruction time do matter. This suggests that what matters is not so much the amount of inputs that school systems are endowed with, but rather how they use them. Correspondingly, international differences in institutional structures of school systems such as external exams, school autonomy, private competition, and tracking have been found to be important sources of international differences in student achievement.

### Accountability in US Education: Applying Lessons from K-12 Experience to Higher Education

- Journal of Economic Perspectives---2016---David Deming,David Figlio

A new push for accountability has become an increasingly important feature of education policy in the United States and throughout the world. Broadly speaking, accountability seeks to hold educational institutions responsible for student outcome using tools ranging from performance "report cards" to explicit rewards and sanctions. We survey the well-developed empirical literature on accountability in K-12 education and consider what lessons we can learn for the design and impact of college ratings. Our bottom line is that accountability works, but rarely as well as one would hope, and often not entirely in the ways that were intended. Research on K-12 accountability offers some hope but also a number of cautionary tales.

### What Can We Learn from Charter School Lotteries?

- Journal of Economic Perspectives---2016---Julia Chabrier,Sarah Cohodes,Philip Oreopoulos

We take a closer look at what can be learned about charter schools by pooling data from lottery-based impact estimates of the effect of charter school attendance at 113 schools. On average, each year enrolled at one of these schools increases math scores by 0.08 standard deviations and English/language arts scores by 0.04 standard deviations relative to attending a counterfactual public school. There is wide variation in impact estimates. To glean what drives this variation, we link these effects to school practices, inputs, and characteristics of fallback schools. In line with the earlier literature, we find that schools that adopt an intensive "No Excuses" attitude towards students are correlated with large positive effects on academic performance, with traditional inputs like class size playing no role in explaining charter school effects. However, we highlight that No Excuses schools are also located among the most disadvantaged neighborhoods in the country. After accounting for performance levels at fallback schools, the relationship between the remaining variation in school performance and the entire No Excuses package of practices weakens. No Excuses schools are effective at raising performance in neighborhoods with very poor performing schools, but the available data have less to say on whether the No Excuses approach could help in nonurban settings or whether other practices would similarly raise achievement in areas with low-performing schools. We find that intensive tutoring is the only No Excuses characteristic that remains significant (even for nonurban schools) once the performance levels of fallback schools are taken into account.

### The Measurement of Student Ability in Modern Assessment Systems

- Journal of Economic Perspectives---2016---Brian Jacob,Jesse Rothstein

Economists often use test scores to measure a student's performance or an adult's human capital. These scores reflect nontrivial decisions about how to measure and scale student achievement, with important implications for secondary analyses. For example, the scores computed in several major testing regimes, including the National Assessment of Educational Progress (NAEP), depend not only on the examinees' responses to test items, but also on their background characteristics, including race and gender. As a consequence, if a black and white student respond identically to questions on the NAEP assessment, the reported ability for the black student will be lower than for the white student—reflecting the lower average performance of black students. This can bias many secondary analyses. Other assessments use different measurement models. This paper aims to familiarize applied economists with the construction and properties of common cognitive score measures and the implications for research using these measures.

### The Need for Accountability in Education in Developing Countries

- Journal of Economic Perspectives---2016---Isaac Mbiti

Despite the rapid growth in enrollment rates across the developing world, there are major concerns about the quality of education that children receive. Across numerous developing countries, recent learning assessments have revealed that children are not able to develop basic numeracy and literary skills. These low levels of learning are the result of a number of interrelated factors, many of which reflect the low levels of accountability across multiple levels of the education system. In this paper, I document the main education challenges facing developing countries, including the lack of accountability among teachers and school management. I also review recent literature that documents the effectiveness of interventions aimed at addressing these accountability issues. Finally, I assess the potential for the market to improve accountability in the education sector in developing countries.

### The Mechanics of Motivated Reasoning

- Journal of Economic Perspectives---2016---Nicholas Epley,Thomas Gilovich

Whenever we see voters explain away their preferred candidate's weaknesses, dieters assert that a couple scoops of ice cream won't really hurt their weight loss goals, or parents maintain that their children are unusually gifted, we are reminded that people's preferences can affect their beliefs. This idea is captured in the common saying, "People believe what they want to believe." But people don't simply believe what they want to believe. Psychological research makes it clear that "motivated beliefs" are guided by motivated reasoning--reasoning in the service of some self-interest, to be sure, but reasoning nonetheless. People generally reason their way to conclusions they favor, with their preferences influencing the way evidence is gathered, arguments are processed, and memories of past experience are recalled. Each of these processes can be affected in subtle ways by people's motivations, leading to biased beliefs that feel objective. In this symposium introduction, we set the stage for discussion of motivated beliefs in the papers that follow by providing more detail about the underlying psychological processes that guide motivated reasoning.

### Mindful Economics: The Production, Consumption, and Value of Beliefs

- Journal of Economic Perspectives---2016---Roland Benabou,Jean Tirole

In this paper, we provide a perspective into the main ideas and findings emerging from the growing literature on motivated beliefs and reasoning. This perspective emphasizes that beliefs often fulfill important psychological and functional needs of the individual. Economically relevant examples include confidence in ones' abilities, moral self-esteem, hope and anxiety reduction, social identity, political ideology, and religious faith. People thus hold certain beliefs in part because they attach value to them, as a result of some (usually implicit) tradeoff between accuracy and desirability. In a sense, we propose to treat beliefs as regular economic goods and assets--which people consume, invest in, reap returns from, and produce, using the informational inputs they receive or have access to. Such beliefs will be resistant to many forms of evidence, with individuals displaying non-Bayesian behaviors such as not wanting to know, wishful thinking, and reality denial.

### The Preference for Belief Consonance

- Journal of Economic Perspectives---2016---Russell Golman,George Loewenstein,Karl Ove Moene,Luca Zarri

We consider the determinants and consequences of a source of utility that has received limited attention from economists: people's desire for the beliefs of other people to align with their own. We relate this 'preference for belief consonance' to a variety of other constructs that have been explored by economists, including identity, ideology, homophily, and fellow-feeling. We review different possible explanations for why people care about others' beliefs and propose that the preference for belief consonance leads to a range of disparate phenomena, including motivated belief-formation, proselytizing, selective exposure to media, avoidance of conversational minefields, pluralistic ignorance, belief-driven clustering, intergroup belief polarization, and conflict. We also discuss an explanation for why disputes are often so intense between groups whose beliefs are, by external observers' standards, highly similar to one-another.

### Motivated Bayesians: Feeling Moral While Acting Egoistically

- Journal of Economic Perspectives---2016---Francesca Gino,Michael I. Norton,Roberto Weber

Research yields ample evidence that individual's behavior often reflects an apparent concern for moral considerations. A natural way to interpret evidence of such motives using an economic framework is to add an argument to the utility function such that agents obtain utility both from outcomes that yield only personal benefits and from acting kindly, honestly, or according to some other notion of "right." Indeed, such interpretations can account for much of the existing empirical evidence. However, a growing body of research at the intersection of psychology and economics produces findings inconsistent with such straightforward, preference-based interpretations for moral behavior. In particular, while people are often willing to take a moral act that imposes personal material costs when confronted with a clear-cut choice between "right" and "wrong," such decisions often seem to be dramatically influenced by the specific contexts in which they occur. In particular, when the context provides sufficient flexibility to allow plausible justification that one can both act egoistically while remaining moral, people seize on such opportunities to prioritize self-interest at the expense of morality. In other words, people who appear to exhibit a preference for being moral may in fact be placing a value on feeling moral, often accomplishing this goal by manipulating the manner in which they process information to justify taking egoistic actions while maintaining this feeling of morality.

### In Defense of the NSF Economics Program

- Journal of Economic Perspectives---2016---Robert Moffitt

The NSF Economics program funds basic research in economics across all its disparate fields. Its budget has experienced a long period of stagnation and decline, with its real value in 2013 below that in 1980 and having declined by 50 percent as a percent of the total NSF budget. The number of grants made by the program has also declined over time, and its current budget is very small compared to that of many other funders of economic research. Over the years, NSF-supported research has supported many of the major intellectual developments in the discipline that have made important contributions to the study of public policy. The public goods argument for government support of basic economic research is strong. Neither private firms, foundations, nor private donors are likely to engage in the comprehensive support of all forms of economic research if NSF were not to exist. Select universities with large endowments are more likely to have the ability to support general economic research in the absence of NSF, but most universities do not have endowments sufficiently large to do so. Support for large-scale general purpose dataset collection is particularly unlikely to receive support from any nongovernment agency. On a priori grounds, it is likely that most NSF-funded research represents a net increase in research effort rather than displacing already-occurring effort by academic economists. Unfortunately, the empirical literature on the net aggregate impact of NSF economics funding is virtually nonexistent.

### A Skeptical View of the National Science Foundation's Role in Economic Research

- Journal of Economic Perspectives---2016---Tyler Cowen,Alexander Tabarrok

We can imagine a plausible case for government support of science based on traditional economic reasons of externalities and public goods. Yet when it comes to government support of grants from the National Science Foundation (NSF) for economic research, our sense is that many economists avoid critical questions, skimp on analysis, and move straight to advocacy. In this essay, we take a more skeptical attitude toward the efforts of the NSF to subsidize economic research. We offer two main sets of arguments. First, a key question is not whether NSF funding is justified relative to laissez-faire, but rather, what is the marginal value of NSF funding given already existing government and nongovernment support for economic research? Second, we consider whether NSF funding might more productively be shifted in various directions that remain within the legal and traditional purview of the NSF. Such alternative focuses might include data availability, prizes rather than grants, broader dissemination of economic insights, and more. Given these critiques, we suggest some possible ways in which the pattern of NSF funding, and the arguments for such funding, might be improved.

### Can War Foster Cooperation?

- Journal of Economic Perspectives---2016---Michal Bauer,Christopher Blattman,Julie Chytilová,Joseph Henrich,Edward Miguel,Tamar Mitts

In the past decade, nearly 20 studies have found a strong, persistent pattern in surveys and behavioral experiments from over 40 countries: individual exposure to war violence tends to increase social cooperation at the local level, including community participation and prosocial behavior. Thus while war has many negative legacies for individuals and societies, it appears to leave a positive legacy in terms of local cooperation and civic engagement. We discuss, synthesize, and reanalyze the emerging body of evidence and weigh alternative explanations. There is some indication that war violence enhances in-group or "parochial" norms and preferences especially, a finding that, if true, suggests that the rising social cohesion we document need not promote broader peace.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2016---Timothy Taylor

### Consumption Inequality

- Journal of Economic Perspectives---2016---Orazio P. Attanasio,Luigi Pistaferri

In this essay, we discuss the importance of consumption inequality in the debate concerning the measurement of disparities in economic well-being. We summarize the advantages and disadvantages of using consumption as opposed to income for measuring trends in economic well-being. We critically evaluate the available evidence on these trends, and in particular discuss how the literature has evolved in its assessment of whether consumption inequality has grown as much as or less than income inequality. We provide some novel evidence on three relatively unexplored themes: inequality in different spending components, inequality in leisure time, and intergenerational consumption mobility.

### Mortality Inequality: The Good News from a County-Level Approach

- Journal of Economic Perspectives---2016---Janet Currie,Hannes Schwandt

In this essay, we ask whether the distributions of life expectancy and mortality have become generally more unequal, as many seem to believe, and we report some good news. Focusing on groups of counties ranked by their poverty rates, we show that gains in life expectancy at birth have actually been relatively equally distributed between rich and poor areas. Analysts who have concluded that inequality in life expectancy is increasing have generally focused on life expectancy at age 40 to 50. This observation suggests that it is important to examine trends in mortality for younger and older ages separately. Turning to an analysis of age-specific mortality rates, we show that among adults age 50 and over, mortality has declined more quickly in richer areas than in poorer ones, resulting in increased inequality in mortality. This finding is consistent with previous research on the subject. However, among children, mortality has been falling more quickly in poorer areas with the result that inequality in mortality has fallen substantially over time. We also show that there have been stunning declines in mortality rates for African Americans between 1990 and 2010, especially for black men. Finally we offer some hypotheses about causes for the results we see, including a discussion of differential smoking patterns by age and socioeconomic status.

### Health Insurance and Income Inequality

- Journal of Economic Perspectives---2016---Robert Kaestner,Darren Lubotsky

Health insurance and other in-kind forms of compensation and government benefits are typically not included in measures of income and analyses of inequality. This omission is important. Given the large and growing cost of health care in the United States and the presence of large government health insurance programs such as Medicaid and Medicare, it is crucial to understand how health insurance and related public policies contribute to measured economic well-being and inequality. Our paper assesses the effect on inequality of the primary government programs that affect health insurance.

### Family Inequality: Diverging Patterns in Marriage, Cohabitation, and Childbearing

- Journal of Economic Perspectives---2016---Shelly Lundberg,Robert A. Pollak,Jenna Stearns

Popular discussions of changes in American families over the past 60 years have revolved around the "retreat from marriage." Concern has focused on increasing levels of nonmarital childbearing, as well as falling marriage rates that stem from both increases in the age at first marriage and greater marital instability. Often lost in these discussions is the fact that the decline of marriage has coincided with a rise in cohabitation. Many "single" Americans now live with a domestic partner and a substantial fraction of "single" mothers are cohabiting, often with the child's father. The share of women who have ever cohabited has nearly doubled over the past 25 years, and the majority of nonmarital births now occur to cohabiting rather than to unpartnered mothers at all levels of education. The emergence of cohabitation as an alternative to marriage has been a key feature of the post–World War II transformation of the American family. These changes in the patterns and trajectories of family structure have a strong socioeconomic gradient. The important divide is between college graduates and others: individuals who have attended college but do not have a four-year degree have family patterns and trajectories that are very similar to those of high school graduates.

### Crime, the Criminal Justice System, and Socioeconomic Inequality

- Journal of Economic Perspectives---2016---Magnus Lofstrom,Steven Raphael

Crime rates in the United States have declined to historical lows since the early 1990s. Prison and jail incarceration rates as well as community correctional populations have increased greatly since the mid-1970s. Both of these developments have disproportionately impacted poor and minority communities. In this paper, we document these trends. We then assess whether the crime declines can be attributed to the massive expansion of the US criminal justice system. We argue that the crime rate is certainly lower as a result of this expansion and in the early 1990s was likely a third lower than what it would have been absent changes in sentencing practices in the 1980s. However, there is little evidence that further stiffening of sentences during the 1990s—a period when prison and other correctional populations expanded rapidly—have had an impact. Hence, the growth in criminal justice populations since 1990s has exacerbated socioeconomic inequality in the United States without generating much benefit in terms of lower crime rates.

### Net Neutrality: A Fast Lane to Understanding the Trade-Offs

- Journal of Economic Perspectives---2016---Shane Greenstein,Martin Peitz,Tommaso Valletti

The last decade has seen a strident public debate about the principle of "net neutrality." The economic literature has focused on two definitions of net neutrality. The most basic definition of net neutrality is to prohibit payments from content providers to internet service providers; this situation we refer to as a one-sided pricing model, in contrast with a two-sided pricing model in which such payments are permitted. Net neutrality may also be defined as prohibiting prioritization of traffic, with or without compensation. The research program then is to explore how a net neutrality rule would alter the distribution of rents and the efficiency of outcomes. After describing the features of the modern internet and introducing the key players, (internet service providers, content providers, and customers), we summarize insights from some models of the treatment of internet traffic, framing issues in terms of the positive economic factors at work. Our survey provides little support for the bold and simplistic claims of the most vociferous supporters and detractors of net neutrality. The economic consequences of such policies depend crucially on the precise policy choice and how it is implemented. The consequences further depend on how long-run economic trade-offs play out; for some of them, there is relevant experience in other industries to draw upon, but for others there is no experience and no consensus forecast.

### The Billion Prices Project: Using Online Prices for Measurement and Research

- Journal of Economic Perspectives---2016---Alberto Cavallo,Roberto Rigobon

A large and growing share of retail prices all over the world are posted online on the websites of retailers. This is a massive and (until recently) untapped source of retail price information. Our objective with the Billion Prices Project, created at MIT in 2008, is to experiment with these new sources of information to improve the computation of traditional economic indicators, starting with the Consumer Price Index. We also seek to understand whether online prices have distinct dynamics, their advantages and disadvantages, and whether they can serve as reliable source of information for economic research. The word "billion" in Billion Prices Project was simply meant to express our desire to collect a massive amount of prices, though we in fact reached that number of observations in less than two years. By 2010, we were collecting 5 million prices every day from over 300 retailers in 50 countries. We describe the methodology used to compute online price indexes and show how they co-move with consumer price indexes in most countries. We also use our price data to study price stickiness, and to investigate the "law of one price" in international economics. Finally we describe how the Billion Prices Project data are publicly shared and discuss why data collection is an important endeavor that macro- and international economists should pursue more often.

### The Masking of the Decline in Manufacturing Employment by the Housing Bubble

- Journal of Economic Perspectives---2016---Kerwin Kofi Charles,Erik Hurst,Matthew Notowidigdo

The employment-to-population ratio among prime-aged adults aged 25–54 has fallen substantially since 2000. The explanations proposed for the decline in the employment-to-population ratio have been of two broad types. One set of explanations emphasizes cyclical factors associated with the recession; the second set of explanations focuses on the role of longer-run structural factors. In this paper, we argue that while the decline in manufacturing and the consequent reduction in demand for less-educated workers put downward pressure on their employment rates in the pre-recession 2000–2006 period, the increased demand for less-educated workers because of the housing boom was simultaneously pushing their employment rates upwards. For a few years, the housing boom served to "mask" the labor market effects of manufacturing decline for less-educated workers. When the housing market collapsed in 2007, there was a large, immediate decline in employment among these workers, who faced not only the sudden disappearance of jobs related to the housing boom, but also the fact that manufacturing's steady decline during the early 2000s left them with many fewer opportunities in that sector than had existed at the start of the decade.

### Going for the Gold: The Economics of the Olympics

- Journal of Economic Perspectives---2016---Robert A. Baade,Victor Matheson

In this paper, we explore the costs and benefits of hosting the Olympic Games. On the cost side, there are three major categories: general infrastructure such as transportation and housing to accommodate athletes and fans; specific sports infrastructure required for competition venues; and operational costs, including general administration as well as the opening and closing ceremony and security. Three major categories of benefits also exist: the short-run benefits of tourist spending during the Games; the long-run benefits or the "Olympic legacy" which might include improvements in infrastructure and increased trade, foreign investment, or tourism after the Games; and intangible benefits such as the "feel-good effect" or civic pride. Each of these costs and benefits will be addressed in turn, but the overwhelming conclusion is that in most cases the Olympics are a money-losing proposition for host cities; they result in positive net benefits only under very specific and unusual circumstances. Furthermore, the cost–benefit proposition is worse for cities in developing countries than for those in the industrialized world. In closing, we discuss why what looks like an increasingly poor investment decision on the part of cities still receives significant bidding interest and whether changes in the bidding process of the International Olympic Committee (IOC) will improve outcomes for potential hosts.

### Retrospectives: How Economists Came to Accept Expected Utility Theory: The Case of Samuelson and Savage

- Journal of Economic Perspectives---2016---Ivan Moscati

Expected utility theory dominated the economic analysis of individual decision-making under risk from the early 1950s to the 1990. Among the early supporters of the expected utility hypothesis in the von Neumann–Morgenstern version were Milton Friedman and Leonard Jimmie Savage, both based at the University of Chicago, and Jacob Marschak, a leading member of the Cowles Commission for Research in Economics. Paul Samuelson of MIT was initially a severe critic of expected utility theory. Between mid-April and early May 1950, Samuelson composed three papers in which he attacked von Neumann and Morgenstern's axiomatic system. By 1952, however, Samuelson had somewhat unexpectedly become a resolute supporter of the expected utility hypothesis. Why did Samuelson change his mind? Based on the correspondence between Samuelson, Savage, Marschak, and Friedman, this article reconstructs the joint intellectual journey that led Samuelson to accept expected utility theory and Savage to revise his motivations for supporting it.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2016---Timothy Taylor

### Correspondence: Scoring Social Security Proposals

- Journal of Economic Perspectives---2016---Peter Diamond,Kashin Konstantin,Gary King,Samir Soneji

### The International Monetary Fund: 70 Years of Reinvention

- Journal of Economic Perspectives---2016---Carmen Reinhart,Christoph Trebesch

A sketch of the International Monetary Fund's 70-year history reveals an institution that has reinvented itself over time along multiple dimensions. This history is primarily consistent with a "demand driven" theory of institutional change, as the needs of its clients and the type of crisis changed substantially over time. Some deceptively "new" IMF activities are not entirely new. Before emerging market economies dominated IMF programs, advanced economies were its earliest (and largest) clients through the 1970s. While currency problems were the dominant trigger of IMF involvement in the earlier decades, banking crises and sovereign defaults became the key focus after the 1980s. Around this time, the IMF shifted from providing relatively brief (and comparatively modest) balance-of-payments support in the era of fixed exchange rates to coping with more chronic debt sustainability problems that emerged with force in the developing economies and have now migrated to advanced economies. As a consequence, the IMF has engaged in "serial lending," with programs often spanning decades. Moreover, the institution faces a growing risk of lending into insolvency; this has been most evident in Greece since 2010. We conclude with the observation that the IMF's role as an international lender of last resort is endangered.

### The IMF's Unmet Challenges

- Journal of Economic Perspectives---2016---Barry Eichengreen,Ngaire Woods

The International Monetary Fund is a controversial institution whose interventions regularly provoke passionate reactions. We will argue that there is an important role for the IMF in helping to solve information, commitment, and coordination problems with significant implications for the stability of national economies and the international monetary and financial system. In executing these functions, the effectiveness of the IMF, like that of a football referee, depends on whether the players see it as competent and impartial. We will argue that the Fund's perceived competence and impartiality, and hence its effectiveness, are limited by its failure to meet four challenges—concerning the quality of its surveillance (of individual countries, groups of countries, and the global system); the relevance of conditionality in loan contracts; the utility of the Fund's approach to debt problems; and the Fund's failure to adopt a system of governance that gives appropriate voice to different stakeholders. These problems of legitimacy will have to be addressed in order for the IMF to play a more effective role in the 21st century.

### The New Role for the World Bank

- Journal of Economic Perspectives---2016---Michael Clemens,Michael Kremer

The World Bank was founded to address what we would today call imperfections in international capital markets. Its founders thought that countries would borrow from the Bank temporarily until they grew enough to borrow commercially. Some critiques and analyses of the Bank are based on the assumption that this continues to be its role. For example, some argue that the growth of private capital flows to the developing world has rendered the Bank irrelevant. However, we will argue that modern analyses should proceed from the premise that the World Bank's central goal is and should be to reduce extreme poverty, and that addressing failures in global capital markets is now of subsidiary importance. In this paper, we discuss what the Bank does: how it spends money, how it influences policy, and how it presents its mission. We argue that the role of the Bank is now best understood as facilitating international agreements to reduce poverty, and we examine implications of this perspective.

### The World Bank: Why It Is Still Needed and Why It Still Disappoints

- Journal of Economic Perspectives---2016---Martin Ravallion

Does the World Bank still have an important role to play? How might it fulfill that role? The paper begins with a brief account of how the Bank works. It then argues that, while the Bank is no longer the primary conduit for capital from high-income to low-income countries, it still has an important role in supplying the public good of development knowledge—a role that is no less pressing today than ever. This argument is not a new one. In 1996, the Bank's President at the time, James D. Wolfensohn, laid out a vision for the "knowledge bank," an implicit counterpoint to what can be called the "lending bank." The paper argues that the past rhetoric of the "knowledge bank" has not matched the reality. An institution such as the World Bank —explicitly committed to global poverty reduction— should be more heavily invested in knowing what is needed in its client countries as well as in international coordination. It should be consistently arguing for well-informed pro-poor policies in its member countries, tailored to the needs of each country, even when such policies are unpopular with the powers-that-be. It should also be using its financial weight, combined with its analytic and convening powers, to support global public goods. In all this, there is a continuing role for lending, but it must be driven by knowledge— both in terms of what gets done and how it is geared to learning. The paper argues that the Bank disappoints in these tasks but that it could perform better.

### The World Trade Organization and the Future of Multilateralism

- Journal of Economic Perspectives---2016---Richard Baldwin

When the General Agreement on Tariffs and Trade was signed by 23 nations in 1947, the goal was to establish a rules-based world trading system and to facilitate mutually advantageous trade liberalization. As the GATT evolved over time and morphed into the World Trade Organization in 1993, both goals have largely been achieved. The WTO presides over a rule-based trading system based on norms that are almost universally accepted and respected by its 163 members. Tariffs today are below 5 percent on most trade, and zero for a very large share of imports. Despite its manifest success, the WTO is widely regarded as suffering from a deep malaise. The main reason is that the latest WTO negotiation, the Doha Round, has staggered between failures, flops, and false dawns since it was launched in 2001. But the Doha logjam has not inhibited tariff liberalization far from it. During the last 15 years, most WTO members have massively lowered barriers to trade, investment, and services bilaterally, regionally, and unilaterally—indeed, everywhere except through the WTO. For today's offshoring-linked international commerce, the trade rules that matter are less about tariffs and more about protection of investments and intellectual property, along with legal and regulatory steps to assure that the two-way flows of goods, services, investment, and people will not be impeded. It's possible to imagine a hypothetical WTO that would incorporate these rules. But the most likely outcome for the future governance of international trade is a two-pillar structure in which the WTO continues to govern with its 1994-era rules while the new rules for international production networks are set by a decentralized process of sometimes overlapping and inconsistent mega-regional agreements.

### Will We Ever Stop Using Fossil Fuels?

- Journal of Economic Perspectives---2016---Thomas Covert,Michael Greenstone,Christopher Knittel

Scientists believe significant climate change is unavoidable without a drastic reduction in the emissions of greenhouse gases from the combustion of fossil fuels. However, few countries have implemented comprehensive policies that price this externality or devote serious resources to developing low-carbon energy sources. In many respects, the world is betting that we will greatly reduce the use of fossil fuels because we will run out of inexpensive fossil fuels (there will be decreases in supply) and/or technological advances will lead to the discovery of less-expensive low-carbon technologies (there will be decreases in demand). The historical record indicates that the supply of fossil fuels has consistently increased over time and that their relative price advantage over low-carbon energy sources has not declined substantially over time. Without robust efforts to correct the market failures around greenhouse gases, relying on supply and/or demand forces to limit greenhouse gas emissions is relying heavily on hope.

### Forty Years of Oil Price Fluctuations: Why the Price of Oil May Still Surprise Us

- Journal of Economic Perspectives---2016---Christiane Baumeister,Lutz Kilian

It has been 40 years since the oil crisis of 1973/74. This crisis has been one of the defining economic events of the 1970s and has shaped how many economists think about oil price shocks. In recent years, a large literature on the economic determinants of oil price fluctuations has emerged. Drawing on this literature, we first provide an overview of the causes of all major oil price fluctuations between 1973 and 2014. We then discuss why oil price fluctuations remain difficult to predict, despite economists' improved understanding of oil markets. Unexpected oil price fluctuations are commonly referred to as oil price shocks. We document that, in practice, consumers, policymakers, financial market participants, and economists may have different oil price expectations, and that, what may be surprising to some, need not be equally surprising to others.

### Using Natural Resources for Development: Why Has It Proven So Difficult?

- Journal of Economic Perspectives---2016---Anthony Venables

Developing economies have found it hard to use natural resource wealth to improve their economic performance. Utilizing resource endowments is a multistage economic and political problem that requires private investment to discover and extract the resource, fiscal regimes to capture revenue, judicious spending and investment decisions, and policies to manage volatility and mitigate adverse impacts on the rest of the economy. Experience is mixed, with some successes (such as Botswana and Malaysia) and more failures. This paper reviews the challenges that are faced in successfully managing resource wealth, the evidence on country performance, and the reasons for disappointing results.

### Power Laws in Economics: An Introduction

- Journal of Economic Perspectives---2016---Xavier Gabaix

Many of the insights of economics seem to be qualitative, with many fewer reliable quantitative laws. However a series of power laws in economics do count as true and nontrivial quantitative laws—and they are not only established empirically, but also understood theoretically. I will start by providing several illustrations of empirical power laws having to do with patterns involving cities, firms, and the stock market. I summarize some of the theoretical explanations that have been proposed. I suggest that power laws help us explain many economic phenomena, including aggregate economic fluctuations. I hope to clarify why power laws are so special, and to demonstrate their utility. In conclusion, I list some power-law-related economic enigmas that demand further exploration.

### Roland Fryer: 2015 John Bates Clark Medalist

- Journal of Economic Perspectives---2016---Lawrence Katz

Roland Fryer is an extraordinary applied microeconomist whose research output related to racial inequality, the US racial achievement gap, and the design and evaluation of educational policies make him a worthy recipient of the 2015 John Bates Clark Medal. I will divide this survey of Roland's research into five categories: the racial achievement gap, education policies and reforms, economics of social interactions, the economics of discrimination and anti-discrimination policies, and further topics involving the black-white racial divide.

### Retrospectives: What Did the Ancient Greeks Mean by Oikonomia?

- Journal of Economic Perspectives---2016---Dotan Leshem

Nearly every economist has at some point in the standard coursework been exposed to a brief explanation that the origin of the word "economy" can be traced back to the Greek word oikonomia, which in turn is composed of two words: oikos, which is usually translated as "household"; and nemein, which is best translated as "management and dispensation." Thus, the cursory story usually goes, the term oikonomia referred to "household management", and while this was in some loose way linked to the idea of budgeting, it has little or no relevance to contemporary economics. This article introduces in more detail what the ancient Greek philosophers meant by "oikonomia." It begins with a short history of the word. It then explores some of the key elements of oikonomia, while offering some comparisons and contrasts with modern economic thought. For example, both Ancient Greek oikonomia and contemporary economics study human behavior as a relationship between ends and means which have alternative uses. However, while both approaches hold that the rationality of any economic action is dependent on the frugal use of means, contemporary economics is largely neutral between ends, while in ancient economic theory, an action is considered economically rational only when taken towards a praiseworthy end. Moreover, the ancient philosophers had a distinct view of what constituted such an end—specifically, acting as a philosopher or as an active participant in the life of the city-state.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2016---Timothy Taylor

### The Doing Business Project: How It Started: Correspondence

- Journal of Economic Perspectives---2016---Simeon Djankov

### On the Verges of Overconfidence

- Journal of Economic Perspectives---2015---Ulrike Malmendier,Timothy Taylor

This symposium provides several examples of overconfidence in certain economic contexts. Michael Grubb looks at "Overconfident Consumers in the Marketplace." Ulrike Malmendier and Geoffrey Tate consider "Behavioral CEOs: The Role of Managerial Overconfidence." Kent Daniel and David Hirshleifer discuss "Overconfident Investors, Predictable Returns, and Excessive Trading." A number of insights and lessons emerge for our understanding of markets, public policy, and welfare. How do firms take advantage of consumer overconfidence? Might government attempts to rule out such practices end up providing benefits to some consumers but imposing costs on others? How are empirical measures of CEO overconfidence related to investment and the capital structure of firms? Can overconfidence among at least some investors help to explain prominent anomalies in stock markets like high levels of trading volume and certain predictable patterns in stock market returns?

### Overconfident Consumers in the Marketplace

- Journal of Economic Perspectives---2015---Michael Grubb

The term overconfidence is used broadly in the psychology literature, referring to both overoptimism and overprecision. Overoptimistic individuals overestimate their own abilities or prospects. In contrast, overprecise individuals place overly narrow confidence intervals around forecasts, thereby underestimating uncertainty. These biases can lead consumers to misforecast their future product usage, or to overestimate their abilities to navigate contract terms. In consequence, consumer overconfidence causes consumers to systematically misweight different dimensions of product quality and price. Poor choices based on biased estimates of a product's expected costs or benefits are the result. For instance, overoptimism about self-control is a leading explanation for why individuals overpay for gym memberships that they underutilize. Similarly, overprecision is a leading explanation for why individuals systematically choose the wrong calling plans, racking up large overage charges for exceeding usage allowances in the process. Beyond these market effects of overconfidence, this paper addresses three additional questions: What will firms do to exploit consumer overconfidence? What are the equilibrium welfare consequences of consumer overconfidence for consumers, firms, and society? And what are the implications of consumer overconfidence for public policy?

### Behavioral CEOs: The Role of Managerial Overconfidence

- Journal of Economic Perspectives---2015---Ulrike Malmendier,Geoffrey Tate

In this paper, we provide a theoretical and empirical framework that allows us to synthesize and assess the burgeoning literature on CEO overconfidence. We also provide novel empirical evidence that overconfidence matters for corporate investment decisions in a framework that explicitly addresses the endogeneity of firms' financing constraints.

### Overconfident Investors, Predictable Returns, and Excessive Trading

- Journal of Economic Perspectives---2015---Kent Daniel,David Hirshleifer

The last several decades have witnessed a shift away from a fully rational paradigm of financial markets toward one in which investor behavior is influenced by psychological biases. Two principal factors have contributed to this evolution: a body of evidence showing how psychological bias affects the behavior of economic actors; and an accumulation of evidence that is hard to reconcile with fully rational models of security market trading volumes and returns. In particular, asset markets exhibit trading volumes that are high, with individuals and asset managers trading aggressively, even when such trading results in high risk and low net returns. Moreover, asset prices display patterns of predictability that are difficult to reconcile with rational expectations-based theories of price formation. In this paper, we discuss the role of overconfidence as an explanation for these patterns.

### The Ongoing Evolution of US Retail: A Format Tug-of-War

- Journal of Economic Perspectives---2015---Ali Hortaçsu,Chad Syverson

The past 15-20 years have seen substantial and visible changes in the way US retail business is conducted. Explanations about what is happening in the retail sector have been dominated by two powerful and not fully consistent narratives: a prediction that retail sales will migrate online and physical retail will be virtually extinguished, and a prediction that future shoppers will almost all be heading to giant physical stores like warehouse clubs and supercenters. Although online retail will surely continue to be a force shaping the sector going forward and may yet emerge as the dominant mode of commerce in the retail sector in the United States, its time for supremacy has not yet arrived. We discuss evidence indicating that the warehouse clubs/supercenter format has had a greater effect on the shape of retail over the past 15-20 years We begin with an overview of the retail sector as a whole, which over the long term has been shrinking as a share of total US economic activity and in terms of relative employment share. The retail sector has experienced stronger-than average productivity growth, but this has not been accompanied by commensurate wage growth. After discussing the important e-commerce and warehouse clubs/supercenters segments, we look more broadly at changes across the structure of the retail sector, including scale, concentration, dynamism, and degree of urbanization. Finally, we consider the likely future course of the retail sector.

### Adolescence and the Path to Maturity in Global Retail

- Journal of Economic Perspectives---2015---Bart J. Bronnenberg,Paul B. Ellickson

We argue that, over the past several decades, the adoption and diffusion of "modern retailing technology" represents a substantial advance in productivity, providing greater product variety, enhanced convenience, and lower prices. We first describe modern retailing, highlighting the role of modern formats, scale (often transcending national boundaries), and increased coordination with upstream and downstream partners in production and distribution. In developed markets, the transition to modern retailing is nearly complete. In contrast, many low-income and emerging markets continue to rely on traditional retail formats, that is, a collection of independent stores and open air markets supplied by small-scale wholesalers, although modern retail has begun to spread to these markets as well. E-commerce is a notable exception: the penetration of e-commerce in China and several developing nations in Asia has already surpassed that of high-income countries for some types of consumer goods. To understand the forces governing the adoption of modern technology and the unique role of e-commerce, we propose a framework that emphasizes the importance of scale and coordination in facilitating the transition from traditional to modern retailing. We conclude with some conjectures regarding the likely impact of increased retail modernization for the developing world.

### Online Higher Education: Beyond the Hype Cycle

- Journal of Economic Perspectives---2015---Michael S. McPherson,Lawrence S. Bacow

When two Silicon Valley start-ups, Coursera and Udacity, embarked in 2012 on a bold effort to supply college-level courses for free over the Internet to learners worldwide, the notion of the Massively Open Online Course (MOOC) captured the nation's attention. Although MOOCs are an interesting experiment with a role to play in the future of higher education, they are a surprisingly small part of the online higher education scene. We believe that online education, at least online education that begins to take full advantage of the interactivity offered by the web, is still in its infancy. We begin by sketching out the several faces of online learning—asynchronous, partially asynchronous, the flipped classroom, and others—as well as how the use of online education differs across the spectrum of higher education. We consider how the growth of online education will affect cost and convenience, student learning, and the role of faculty and administrators. We argue that spread of online education through higher education is likely to be slower than many commenters expect. We hope that online education will bring substantial benefits. But less-attractive outcomes are also possible if, for instance, legislators use the existence of online education as an excuse for sharp cuts in higher education budgets that lead to lower-quality education for many students, at the same time that richer, more selective schools are using online education as one more weapon in the arms race dynamic that is driving costs higher.

### How Economics Faculty Can Survive (and Perhaps Thrive) in a Brave New Online World

- Journal of Economic Perspectives---2015---Peter Navarro

The academy in which we toil is moving rapidly towards a greater role for online delivery of higher education, and both fans and skeptics offer strong reasons to believe this technological shock will have substantial disruptive effects on faculty. How can we as economic educators continue to provide sufficient value-added to justify our role in a world where much of what we now do is effectively being automated and commoditized? In this brave new online world, many successful and resilient faculty will add value (and differentiate their product) not by producing costly and elaborate multimedia lectures in which they become a superstar professor-celebrity, but rather through careful, clever, and innovative choices regarding both the adoption of the online content of other providers and the forms of online interactions they integrate into their course designs. Possible forms of faculty-to-student and student-to-student interactions run the digital gamut from discussion boards and electronic testing to peer assessments, games and simulations, and virtual office hours. This article explores basic descriptive and prescriptive questions economic educators and their administrators are likely to face as the online education tide rises. For example, how much does it cost to develop online content and how much time does it take? What are the key "ingredients" for a pedagogically sound online course? Throughout, I will draw on both the extant literature as well as my own experience at the University of California, Irvine, where the online evolution is advancing rapidly. [This article is available for download in audio (MP3) format from the journal website.]

### Rewriting Monetary Policy 101: What's the Fed's Preferred Post-Crisis Approach to Raising Interest Rates?

- Journal of Economic Perspectives---2015---Jane E. Ihrig,Ellen E. Meade,Gretchen C. Weinbach

For many years prior to the global financial crisis, the Federal Open Market Committee set a target for the federal funds rate and achieved that target through small purchases and sales of securities in the open market. In the aftermath of the financial crisis, with a superabundant level of reserve balances in the banking system having been created as a result of the Federal Reserve's large-scale asset purchase programs, this approach to implementing monetary policy will no longer work. This paper provides a primer on the Fed's implementation of monetary policy. We use the standard textbook model to illustrate why the approach used by the Federal Reserve before the financial crisis to keep the federal funds rate near the Federal Open Market Committee's target will not work in current circumstances, and explain the approach that the Committee intends to use instead when it decides to begin raising short-term interest rates.

### Household Surveys in Crisis

- Journal of Economic Perspectives---2015---Bruce Meyer,Wallace K C Mok,James Sullivan

Household surveys, one of the main innovations in social science research of the last century, are threatened by declining accuracy due to reduced cooperation of respondents. While many indicators of survey quality have steadily declined in recent decades, the literature has largely emphasized rising nonresponse rates rather than other potentially more important dimensions to the problem. We divide the problem into rising rates of nonresponse, imputation, and measurement error, documenting the rise in each of these threats to survey quality over the past three decades. A fundamental problem in assessing biases due to these problems in surveys is the lack of a benchmark or measure of truth, leading us to focus on the accuracy of the reporting of government transfers. We provide evidence from aggregate measures of transfer reporting as well as linked microdata. We discuss the relative importance of misreporting of program receipt and conditional amounts of benefits received, as well as some of the conjectured reasons for declining cooperation and for survey errors. We end by discussing ways to reduce the impact of the problem including the increased use of administrative data and the possibilities for combining administrative and survey data.

### Seven Centuries of European Economic Growth and Decline

- Journal of Economic Perspectives---2015---Roger Fouquet,Stephen Broadberry

This paper investigates very long-run preindustrial economic development. New annual GDP per capita data for six European countries over the last seven hundred years paint a clearer picture of the history of European economic development. We confirm that sustained growth has been a recent phenomenon, but reject the argument that there was no long-run growth in living standards before the Industrial Revolution. Instead, the evidence demonstrates the existence of numerous periods of economic growth before the nineteenth century—periods of unsustained, but raising GDP per capita. We also show that many of the economies experienced substantial economic decline. Thus, rather than being stagnant, pre-nineteenth century European economies experienced a great deal of change. Finally, we offer some evidence that, from the nineteenth century, these economies increased the likelihood of being in a phase of economic growth and reduced the risk of being in a phase of economic decline.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2015---Timothy Taylor

### Why Are There Still So Many Jobs? The History and Future of Workplace Automation

- Journal of Economic Perspectives---2015---David Autor

In this essay, I begin by identifying the reasons that automation has not wiped out a majority of jobs over the decades and centuries. Automation does indeed substitute for labor—as it is typically intended to do. However, automation also complements labor, raises output in ways that leads to higher demand for labor, and interacts with adjustments in labor supply. Journalists and even expert commentators tend to overstate the extent of machine substitution for human labor and ignore the strong complementarities between automation and labor that increase productivity, raise earnings, and augment demand for labor. Changes in technology do alter the types of jobs available and what those jobs pay. In the last few decades, one noticeable change has been a "polarization" of the labor market, in which wage gains went disproportionately to those at the top and at the bottom of the income and skill distribution, not to those in the middle; however, I also argue, this polarization and is unlikely to continue very far into future. The final section of this paper reflects on how recent and future advances in artificial intelligence and robotics should shape our thinking about the likely trajectory of occupational change and employment growth. I argue that the interplay between machine and human comparative advantage allows computers to substitute for workers in performing routine, codifiable tasks while amplifying the comparative advantage of workers in supplying problem-solving skills, adaptability, and creativity.

### The History of Technological Anxiety and the Future of Economic Growth: Is This Time Different?

- Journal of Economic Perspectives---2015---Joel Mokyr,Chris Vickers,Nicolas L. Ziebarth

Technology is widely considered the main source of economic progress, but it has also generated cultural anxiety throughout history. The developed world is now suffering from another bout of such angst. Anxieties over technology can take on several forms, and we focus on three of the most prominent concerns. First, there is the concern that technological progress will cause widespread substitution of machines for labor, which in turn could lead to technological unemployment and a further increase in inequality in the short run, even if the long-run effects are beneficial. Second, there has been anxiety over the moral implications of technological process for human welfare, broadly defined. While, during the Industrial Revolution, the worry was about the dehumanizing effects of work, in modern times, perhaps the greater fear is a world where the elimination of work itself is the source of dehumanization. A third concern cuts in the opposite direction, suggesting that the epoch of major technological progress is behind us. Understanding the history of technological anxiety provides perspective on whether this time is truly different. We consider the role of these three anxieties among economists, primarily focusing on the historical period from the late 18th to the early 20th century, and then compare the historical and current manifestations of these three concerns.

### Is a Cambrian Explosion Coming for Robotics?

- Journal of Economic Perspectives---2015---Gill A. Pratt

About half a billion years ago, life on earth experienced a short period of very rapid diversification called the "Cambrian Explosion." Many theories have been proposed for the cause of the Cambrian Explosion, one of the most provocative being the evolution of vision, allowing animals to dramatically increase their ability to hunt and find mates. Today, technological developments on several fronts are fomenting a similar explosion in the diversification and applicability of robotics. Many of the base hardware technologies on which robots depend—particularly computing, data storage, and communications—have been improving at exponential growth rates. Two newly blossoming technologies—"Cloud Robotics" and "Deep Learning" —could leverage these base technologies in a virtuous cycle of explosive growth. I examine some key technologies contributing to the present excitement in the robotics field. As with other technological developments, there has been a significant uptick in concerns about the societal implication of robotics and artificial intelligence. Thus, I offer some thoughts about how robotics may affect the economy and some ways to address potential difficulties.

### Promises and Perils of Pre-analysis Plans

- Journal of Economic Perspectives---2015---Benjamin A. Olken

The purpose of this paper is to help think through the advantages and costs of rigorous pre-specification of statistical analysis plans in economics. A pre-analysis plan pre-specifies in a precise way the analysis to be run before examining the data. A researcher can specify variables, data cleaning procedures, regression specifications, and so on. If the regressions are pre-specified in advance and researchers are required to report all the results they pre-specify, data-mining problems are greatly reduced. I begin by laying out the basics of what a statistical analysis plan actually contains so those researchers unfamiliar with it can better understand how it is done. In so doing, I have drawn both on standards used in clinical trials, which are clearly specified by the Food and Drug Administration, as well as my own practical experience from writing these plans in economics contexts. I then lay out some of the advantages of pre-specified analysis plans, both for the scientific community as a whole and also for the researcher. I also explore some of the limitations and costs of such plans. I then review a few pieces of evidence that suggest that, in many contexts, the benefits of using pre-specified analysis plans may not be as high as one might have expected initially. For the most part, I will focus on the relatively narrow issue of pre-analysis for randomized controlled trials.

### Pre-analysis Plans Have Limited Upside, Especially Where Replications Are Feasible

- Journal of Economic Perspectives---2015---Lucas Coffman,Muriel Niederle

The social sciences—including economics—have long called for transparency in research to counter threats to producing robust and replicable results. In this paper, we discuss the pros and cons of three of the more prominent proposed approaches: pre-analysis plans, hypothesis registries, and replications. They have been primarily discussed for experimental research, both in the field including randomized control trials and the laboratory, so we focus on these areas. A pre-analysis plan is a credibly fixed plan of how a researcher will collect and analyze data, which is submitted before a project begins. Though pre-analysis plans have been lauded in the popular press and across the social sciences, we will argue that enthusiasm for pre-analysis plans should be tempered for several reasons. Hypothesis registries are a database of all projects attempted; the goal of this promising mechanism is to alleviate the "file drawer problem," which is that statistically significant results are more likely to be published, while other results are consigned to the researcher's "file drawer." Finally, we evaluate the efficacy of replications. We argue that even with modest amounts of researcher bias—either replication attempts bent on proving or disproving the published work, or poor replication attempts—replications correct even the most inaccurate beliefs within three to five replications. We offer practical proposals for how to increase the incentives for researchers to carry out replications.

### Law, Regulation, and the Business Climate: The Nature and Influence of the World Bank Doing Business Project

- Journal of Economic Perspectives---2015---Timothy Besley

The importance of a well-functioning legal and regulatory system in creating an effective market economy is now widely accepted. One flagship project that tries to measure the environment in which businesses operate in countries across the world is the World Bank's Doing Business project, which was launched in 2002. This project gathers quantitative data to compare regulations faced by small and medium-size enterprises across economies and over time. The centerpiece of the project is the annual Doing Business report. It was first published in 2003 with five sets of indicators for 133 economies, and currently includes 11 sets of indicators for 189 economies. The report includes a table that ranks each country in the world according to its scores across the indicators. The Doing Business project has become a major resource for academics, journalists, and policymakers. The project also enjoys a high public profile with close to ten million hits on its website each year. With such interest, it's no surprise that the Doing Business report has come under intense scrutiny. In 2012, following discussions by its board, the World Bank commissioned an independent review panel to evaluate the project, on which I served as a member. In this paper, I first describe how the Doing Business project works and illustrate with some of the key findings of the 2015 report. Next, I address what is valuable about the project, the criticisms of it, and some wider political economy issues illustrated by the report.

### How Business Is Done in the Developing World: Deals versus Rules

- Journal of Economic Perspectives---2015---Mary Hallward-Driemeier,Lant Pritchett

What happens in the developing world when stringent regulations characterizing the investment climate meet weak government willingness or capability to enforce those regulations? How is business actually done? The Doing Business project surveys experts concerning the legally required time and costs of regulatory compliance for various aspects of private enterprise —starting a firm, dealing with construction permits, trading across borders, paying taxes, getting credit, enforcing contracts, and so on—around the world. The World Bank's firm-level Enterprise Surveys around the world ask managers at a wide array of firms about their business, including questions about how long it took to go through various processes like obtaining an operating license or a construction permit, or bringing in imports. This paper compares the results of three broadly comparable indicators from the Doing Business and Enterprise Surveys. Overall, we find that the estimate of legally required time for firms to complete a certain legal and regulatory process provided by the Doing Business survey does not summarize even modestly well the experience of firms as reported by the Enterprise Surveys. When strict de jure regulation and high rates of taxation meet weak governmental capabilities for implementation and enforcement, we argue that researchers and policymakers should stop thinking about regulations as creating "rules" to be followed, but rather as creating a space in which "deals" of various kinds are possible.

### The Microeconomic Dimensions of the Eurozone Crisis and Why European Politics Cannot Solve Them

- Journal of Economic Perspectives---2015---Christian Thimann

The academic and policy debate about the crisis in Europe's single currency area is usually dominated by macroeconomic and public sector considerations. The microeconomic dimensions of the crisis and the private sector issues typically get much less attention. However, it is the private sector hiring choices of domestic and foreign firms that will ultimately be decisive. This paper argues there are two main problems holding back private sector employment creation in the stressed eurozone countries. First, there is a persistent competitiveness problem in some of the eurozone countries due to high labor costs relative to underlying productivity. Second, widespread structural barriers make job creation in these countries far more arduous than in many other advanced economies, and even more arduous than in some key emerging economies and formerly planned economies. Structural barriers to private sector development are particularly widespread in the areas of labor market functioning, goods market functioning, and government regulation. Evidence from the World Economic Forum's Global Competitiveness Index and the World Bank's Doing Business dataset confirms the immense size and persistence of these barriers, despite improvements in some countries in recent years. The paper also presents a novel explanation for the difficulty of structural reforms in the eurozone, tracing the challenge to the current trend to "Europeanize" and "politicize" economic reform discussions in national policy fields where "Europe" is not a legitimate actor and the European political level is not effective.

### E-Books: A Tale of Digital Disruption

- Journal of Economic Perspectives---2015---Richard J. Gilbert

E-book sales surged after Amazon introduced the Kindle e-reader at the end of 2007 and accounted for about one quarter of all trade book sales by the end of 2013. Amazon's aggressive (low) pricing of e-books led to allegations that e-books were bankrupting brick and mortar book booksellers. Amazon's commanding position as a bookseller also raises concerns about monopoly power, and publishers are concerned about Amazon's power to displace them in the book value chain. I find little evidence that e-books are primarily responsible for the decline of independent booksellers. I also conclude that entry barriers are not sufficient to allow Amazon to set monopoly prices. Publishers are at risk from Amazon's monopsony (buyer) power and so sought "agency" pricing in an effort to raise the price of ebooks, promote retail competition, and reduce Amazon's influence as an e-retailer. (In the agency pricing model, the publisher specifies the retail price with a commission for the retailer. In a traditional, "wholesale" pricing model, publishers sell a book to retailers at a wholesale price and retailers set the retail price.) Although agency pricing was challenged by the Department of Justice, it may yet prevail in some form as an equilibrium pricing model for e-book sales.

## The Indian Gaming Regulatory Act and Its Effects on American Indian Economic Development

- Journal of Economic Perspectives---2015---Randall K. Q. Akee,Katherine A. Spilde,Jonathan B. Taylor

The Indian Gaming Regulatory Act (IGRA), passed by the US Congress in 1988, was a watershed in the history of policymaking directed toward reservation-resident American Indians. IGRA set the stage for tribal government-owned gaming facilities. It also shaped how this new industry would develop and how tribal governments would invest gaming revenues. Since then, Indian gaming has approached commercial, state-licensed gaming in total revenues. Gaming operations have had a far-reaching and transformative effect on American Indian reservations and their economies. Specifically, Indian gaming has allowed marked improvements in several important dimensions of reservation life. For the first time, some tribal governments have moved to fiscal independence. Native nations have invested gaming revenues in their economies and societies, often with dramatic effect.

## Recommendations for Further Reading

- Journal of Economic Perspectives---2015---Timothy Taylor

## A Retrospective Look at Rescuing and Restructuring General Motors and Chrysler

- Journal of Economic Perspectives---2015---Austan D. Goolsbee,Alan Krueger

The rescue of the US automobile industry amid the 2008-2009 recession and financial crisis was a consequential, controversial, and difficult decision made at a fraught moment for the US economy. Both of us were involved in the decision process at the time, but since have moved back to academia. More than five years have passed since the bailout began, and it is timely to look back at this unusual episode of economic policymaking to consider what we got right, what we got wrong, and why. In this article, we describe the events that brought two of the largest industrial companies in the world to seek a bailout from the US government, the analysis that was used to evaluate the decision (including what the alternatives were and whether a rescue would even work), the steps that were taken to rescue and restructure General Motors and Chrysler, and the performance of the US auto industry since the bailout. We close with general lessons to be learned from the episode.

## The Rescue of Fannie Mae and Freddie Mac

- Journal of Economic Perspectives---2015---W Frame,Andreas Fuster,Joseph Tracy,James Vickery

The imposition of federal conservatorships on September 6, 2008, at the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation—commonly known as Fannie Mae and Freddie Mac—was one of the most dramatic events of the financial crisis. These two government-sponsored enterprises play a central role in the US housing finance system, and at the start of their conservatorships held or guaranteed about $5.2 trillion of home mortgage debt. The two firms were often cited as shining examples of public-private partnerships—that is, the harnessing of private capital to advance the social goal of expanding homeownership. But in reality, the hybrid structures of Fannie Mae and Freddie Mac were destined to fail at some point, owing to their singular exposure to residential real estate and moral hazard incentives emanating from the implicit guarantee of their liabilities. We describe the financial distress experienced by the two firms, the events that led the federal government to take dramatic action in an effort to stabilize housing and financial markets, and the various resolution options available to US policymakers at the time; and we evaluate the success of the choice of conservatorship in terms of its effects on financial markets and financial stability, on mortgage supply, and on the financial position of the two firms themselves. Conservatorship achieved its key short-run goals of stabilizing mortgage markets and promoting financial stability during a period of extreme stress. However, conservatorship was intended to be a temporary fix, not a long-term solution, and more than six years later, Fannie Mae and Freddie Mac still remain in conservatorship.

### An Assessment of TARP Assistance to Financial Institutions

- Journal of Economic Perspectives---2015---Charles Calomiris,Urooj Khan

Six years after the passage of the 2008 Troubled Asset Relief Program, commonly known as TARP, it remains hard to measure the total social costs and benefits of the assistance to banks provided under TARP programs. TARP was not a single approach to assisting weak banks but rather a variety of changing solutions to a set of evolving problems. TARP's passage was associated with significant improvements in financial markets and the health of financial intermediaries, as well as an increase in the supply of lending by recipients. However, a full evaluation must also take into account other factors, including the risks borne by taxpayers in the course of the bailouts; moral-hazard costs that could result in more risk-taking in the future; and social costs related to perceived unfairness. Our evaluation is organized in five parts: 1) What did policymakers do? 2) What are the proper objectives of interventions like TARP assistance to financial institutions? 3) Did TARP succeed in those economic objectives? 4) Were TARP funds allocated purely on an economic basis, or did political favoritism play a role? 5) Would alternative policies, either alongside or instead of TARP, and alternative design features of TARP, have worked better?

### AIG in Hindsight

- Journal of Economic Perspectives---2015---Robert McDonald,Anna Paulson

The near-failure on September 16, 2008, of American International Group (AIG) was an iconic moment in the financial crisis. Two large bets on real estate made with funding vulnerable to bank-run-like dynamics pushed AIG to the brink of bankruptcy. AIG used securities lending to transform insurance company assets into residential mortgage-backed securities and collateralized debt obligations, ultimately losing at least $21 billion and threatening the solvency of the life insurance companies. AIG also sold insurance on multisector collateralized debt obligations, backed by real estate assets, ultimately losing more than $30 billion. These activities were apparently motivated by a belief that AIG's real estate bets would not suffer defaults and were "money-good." We find that these securities have in fact suffered write-downs and that the stark "money-good" claim can be rejected. Ultimately, both liquidity and solvency were issues for AIG.

### Legal, Political, and Institutional Constraints on the Financial Crisis Policy Response

- Journal of Economic Perspectives---2015---Phillip Swagel

As the financial crisis manifested itself and peaked in 2007 and 2008, the response of US policymakers and regulators was shaped in important ways by legal and political constraints. Policymakers lacked certain legal authorities that would have been useful for addressing the crisis, notably to use public capital to stabilize the banking sector or to deal with the failure of large financial firms such as insurance companies and investment banks that were outside the scope of bank regulators' authority to resolve deposit-taking commercial banks. Legal constraints were keenly felt at the US Department of the Treasury, where I served as a senior official from December 2006 to January 2009. Treasury had virtually no emergency economic authority at the onset of the crisis in 2007, with the exception of the Treasury's Exchange Stabilization Fund, which was intended for use in exchange rate interventions. As the systemic risks of the financial crisis became apparent, the initial policy response largely fell to the Federal Reserve, which had the authority to act under emergency circumstances. There will inevitably be another financial crisis, and the response will be shaped by both the lessons learned from recent history and the statutory and political changes in the wake of the crisis. The paper thus concludes by discussing changes in constraints since the crisis, with a focus on two developments: 1) the political reality that there will not in the near future be another wide-ranging grant of fiscal authority as was given with the Troubled Asset Relief Program, and 2) the new legal authorities provided in the Wall Street Reform and Consumer Protection Act of 2010, commonly known as the Dodd-Frank law.

### Understanding the Increase in Disability Insurance Benefit Receipt in the United States

- Journal of Economic Perspectives---2015---Jeffrey Liebman

The share of working-age Americans receiving disability benefits from the federal Disability Insurance (DI) program has increased significantly in recent decades, from 2.2 percent in the late 1970s to 3.6 percent in the years immediately preceding the 2007-2009 recession and 4.6 percent in 2013. With the federal Disability Insurance Trust Fund currently projected to be depleted in 2016, Congressional action of some sort is likely to occur within the next several years. It is therefore a good time to sort out the competing explanations for the increase in disability benefit receipt and to review some of the ideas that economists have put forth for reforming US disability programs.

### The Rise and Fall of Disability Insurance Enrollment in the Netherlands

- Journal of Economic Perspectives---2015---Pierre Koning,Maarten Lindeboom

As recently as 15 years ago, the high level of Disability Insurance (DI) enrollment was considered to be one of the major social and economic problems of the Netherlands; indeed, the Netherlands was characterized as the country with the most out-of-control disability program of OECD countries. But since about 2002, the Netherlands has seen a spectacular decline in its Disability Insurance enrollment rate. Radical reforms to the Dutch DI system were implemented over the period 1996 to 2006. We cluster these reforms in three broad categories: 1) reducing the incentives of employers to move workers to disability; 2) increased gatekeeping; and 3) tightening disability eligibility criteria while enhancing worker incentives. The reforms appear to have been very effective. Since 2002, yearly DI inflow rates dropped from 1.5 percent in 2001 to about 0.5 percent of the insured population in 2012. We argue that particularly the interaction of employer incentives and formal employer obligations has contributed to the substantial decrease in DI inflow. On the downside, however, it seems workers with bad health have sorted into temporary employment—without employers bearing the financial responsibility of their benefit costs.

### Disability Benefit Receipt and Reform: Reconciling Trends in the United Kingdom

- Journal of Economic Perspectives---2015---James Banks,Richard Blundell,Carl Emmerson

The UK has enacted a number of reforms to the structure of disability benefits that has made it a major case study for other countries thinking of reform. The introduction of Incapacity Benefit in 1995 coincided with a strong decline in disability benefit expenditure, reversing previous sharp increases. From 2008 the replacement of Incapacity Benefit with Employment and Support Allowance was intended to reduce spending further. We bring together administrative and survey data over the period and highlight key differences in receipt of disability benefits by age, sex, and health. These disability benefit reforms and the trends in receipt are also put into the context of broader trends in health and employment by education and sex. We document a growing proportion of claimants in any age group with mental and behavioral disorders as their principal health condition. We also show the decline in the number of older working age men receiving disability benefits to have been partially offset by growth in the number of younger women receiving these benefits. We speculate on the impact of disability reforms on employment.

### Reforming LIBOR and Other Financial Market Benchmarks

- Journal of Economic Perspectives---2015---Darrell Duffie,Jeremy C. Stein

LIBOR is the London Interbank Offered Rate: a measure of the interest rate at which large banks can borrow from one another on an unsecured basis. LIBOR is often used as a benchmark rate—meaning that the interest rates that consumers and businesses pay on trillions of dollars in loans adjust up and down contractually based on movements in LIBOR. Investors also rely on the difference between LIBOR and various risk-free interest rates as a gauge of stress in the banking system. Benchmarks such as LIBOR therefore play a central role in modern financial markets. Thus, news reports in 2008 revealing widespread manipulation of LIBOR threatened the integrity of this benchmark and lowered trust in financial markets. We begin with a discussion of the economic role of benchmarks in reducing market frictions. We explain how manipulation occurs in practice, and illustrate how benchmark definitions and fixing methods can mitigate manipulation. We then turn to an overall policy approach for reducing the susceptibility of LIBOR to manipulation before focusing on the practical problem of how to make an orderly transition to alternative reference rates without raising undue legal risks.

### Bitcoin: Economics, Technology, and Governance

- Journal of Economic Perspectives---2015---Rainer Böhme,Nicolas Christin,Benjamin Edelman,Tyler Moore

Bitcoin is an online communication protocol that facilitates the use of a virtual currency, including electronic payments. Bitcoin's rules were designed by engineers with no apparent influence from lawyers or regulators. Bitcoin is built on a transaction log that is distributed across a network of participating computers. It includes mechanisms to reward honest participation, to bootstrap acceptance by early adopters, and to guard against concentrations of power. Bitcoin's design allows for irreversible transactions, a prescribed path of money creation over time, and a public transaction history. Anyone can create a Bitcoin account, without charge and without any centralized vetting procedure —or even a requirement to provide a real name. Collectively, these rules yield a system that is understood to be more flexible, more private, and less amenable to regulatory oversight than other forms of payment—though as we discuss, all these benefits face important limits. Bitcoin is of interest to economists as a virtual currency with potential to disrupt existing payment systems and perhaps even monetary systems. This article presents the platform's design principles and properties for a nontechnical audience; reviews its past, present, and future uses; and points out risks and regulatory issues as Bitcoin interacts with the conventional financial system and the real economy.

### Systematic Bias and Nontransparency in US Social Security Administration Forecasts

- Journal of Economic Perspectives---2015---Konstantin Kashin,Gary King,Samir Soneji

We offer an evaluation of the Social Security Administration demographic and financial forecasts used to assess the long-term solvency of the Social Security Trust Funds. This same forecasting methodology is also used in evaluating policy proposals put forward by Congress to modify the Social Security program. Ours is the first evaluation to compare the SSA forecasts with observed truth; for example, we compare forecasts made in the 1980s, 1990s, and 2000s with outcomes that are now available. We find that Social Security Administration forecasting errors—as evaluated by how accurate the forecasts turned out to be—were approximately unbiased until 2000 and then became systematically biased afterward, and increasingly so over time. Also, most of the forecasting errors since 2000 are in the same direction, consistently misleading users of the forecasts to conclude that the Social Security Trust Funds are in better financial shape than turns out to be the case. Finally, the Social Security Administration's informal uncertainty intervals appear to have become increasingly inaccurate since 2000. At present, the Office of the Chief Actuary, at the Social Security Administration, does not reveal in full how its forecasts are made. Every future Trustees Report, without exception, should include a routine evaluation of all prior forecasts, and a discussion of what forecasting mistakes were made, what was learned from the mistakes, and what actions might be taken to improve forecasts going forward. And the Social Security Administration and its Office of the Chief Actuary should follow best practices in academia and many other parts of government and make their forecasting procedures public and replicable, and should calculate and report calibrated uncertainty intervals for all forecasts.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2015---Timothy Taylor

### The Rise and Decline of General Laws of Capitalism

- Journal of Economic Perspectives---2015---Daron Acemoglu,James Robinson

Thomas Piketty's (2013) book, Capital in the 21st Century , follows in the tradition of the great classical economists, like Marx and Ricardo, in formulating general laws of capitalism to diagnose and predict the dynamics of inequality. We argue that general economic laws are unhelpful as a guide to understanding the past or predicting the future because they ignore the central role of political and economic institutions, as well as the endogenous evolution of technology, in shaping the distribution of resources in society. We use regression evidence to show that the main economic force emphasized in Piketty's book, the gap between the interest rate and the growth rate, does not appear to explain historical patterns of inequality (especially, the share of income accruing to the upper tail of the distribution). We then use the histories of inequality of South Africa and Sweden to illustrate that inequality dynamics cannot be understood without embedding economic factors in the context of economic and political institutions, and also that the focus on the share of top incomes can give a misleading characterization of the true nature of inequality.

### Pareto and Piketty: The Macroeconomics of Top Income and Wealth Inequality

- Journal of Economic Perspectives---2015---Charles Jones

Since the early 2000s, research by Thomas Piketty, Emmanuel Saez, and their coauthors has revolutionized our understanding of income and wealth inequality. In this paper, I highlight some of the key empirical facts from this research and comment on how they relate to macroeconomics and to economic theory more generally. One of the key links between data and theory is the Pareto distribution. The paper describes simple mechanisms that give rise to Pareto distributions for income and wealth and considers the economic forces that influence top inequality over time and across countries. For example, it is in this context that the role of the famous r - g expression is best understood.

### What Do We Know about the Evolution of Top Wealth Shares in the United States?

- Journal of Economic Perspectives---2015---Wojciech Kopczuk

I discuss available evidence about the evolution of top wealth shares in the United States over the course of the 20th century. The three main approaches—the Survey of Consumer Finances, estate tax multiplier, and capitalization methods—generate generally consistent findings until mid-1980s but diverge since then, with the capitalization method showing a dramatic increase in wealth concentration and the other two methods showing at best a small increase. I discuss strengths and weaknesses of different approaches. The increase in capitalization estimates since 2000 is driven by a dramatic and puzzling increase in fixed income assets. There is evidence that estate tax estimates may not be sufficiently accounting for mortality improvements over time. The nonresponse and coverage issues in the SCF are a concern. I conclude that the changing nature of top incomes and the increased importance of self-made wealth may explain difficulties in implementing each of the methods and why the results diverge.

### Putting Distribution Back at the Center of Economics: Reflections on Capital in the Twenty-First Century

- Journal of Economic Perspectives---2015---Thomas Piketty

When a lengthy book is widely discussed in academic circles and the popular media, it is probably inevitable that the arguments of the book will be simplified in the telling and retelling. In the case of my book Capital in the Twenty-First Century (2014), a common simplification of the main theme is that because the rate of return on capital r exceeds the growth rate of the economy g , the inequality of wealth is destined to increase indefinitely over time. In my view, the magnitude of the gap between r and g is indeed one of the important forces that can explain historical magnitudes and variations in wealth inequality. However, I do not view r > g as the only or even the primary tool for considering changes in income and wealth in the 20th century, or for forecasting the path of income and wealth inequality in the 21st century. In this essay, I will take up several themes from my book that have perhaps become attenuated or garbled in the ongoing discussions of the book, and will seek to re-explain and re-frame these themes. First, I stress the key role played in my book by the interaction between beliefs systems, institutions, and the dynamics of inequality. Second, I briefly describe my multidimensional approach to the history of capital and inequality. Third, I review the relationship and differing causes between wealth inequality and income inequality. Fourth, I turn to the specific role of r > g in the dynamics of wealth inequality: specifically, a larger r - g gap will amplify the steady-state inequality of a wealth distribution that arises out of a given mixture of shocks. Fifth, I consider some of the scenarios that affect how r - g might evolve in the 21st century, including rising international tax competition, a growth slowdown, and differential access by the wealthy to higher returns on capital. Finally, I seek to clarify what is distinctive in my historical and political economy approach to institutions and inequality dynamics, and the complementarity with other approaches.

### The Superiority of Economists

- Journal of Economic Perspectives---2015---Marion Fourcade,Etienne Ollion,Yann Algan

In this essay, we analyze the dominant position of economics within the network of the social sciences in the United States. We begin by documenting the relative insularity of economics, using bibliometric data. Next we analyze the tight management of the field from the top down, which gives economics its characteristic hierarchical structure. Economists also distinguish themselves from other social scientists through their much better material situation (many teach in business schools, have external consulting activities), their more individualist worldviews, and their confidence in their discipline's ability to fix the world's problems. Taken together, these traits constitute what we call the superiority of economists, where economists' objective supremacy is intimately linked with their subjective sense of authority and entitlement. While this superiority has certainly fueled economists' practical involvement and their considerable influence over the economy, it has also exposed them more to conflicts of interests, political critique, even derision.

### The Case for Paying College Athletes

- Journal of Economic Perspectives---2015---Allen R. Sanderson,John Siegfried

Big-time commercialized intercollegiate athletics has attracted considerable attention in recent years. Popularity of this uniquely American activity, measured by attendance, television ratings, or team revenues, has never been higher. At the same time, however, several high-profile scandals exposing unseemly behavior on the part of players, coaches, and even respected higher education institutions—as well as questions about the distribution of the enormous revenues pouring into university athletic departments—have marred the image of these college football and men's basketball programs. Currently there are several legal challenges to the National Collegiate Athletic Association (NCAA) and its member institutions that may change dramatically and permanently the arrangements between the

NCAA cartel, its member colleges and universities, and the "student-athletes" who play on the teams. These challenges all focus on the NCAA's collective fixing of players' wages. We describe this peculiar "industry," detailing the numerous market imperfections in both output and labor markets, the demand for and supply of college athlete labor, and possible alternative arrangements in the college athlete labor market, including the ramifications of compensating players beyond the tuition, room, board, books, and fees that some current players already receive as grants-in-aid.

### Pricing in the Market for Anticancer Drugs

- Journal of Economic Perspectives---2015---David H. Howard,Peter B. Bach,Ernst R. Berndt,Rena M. Conti

In 2011, Bristol-Myers Squibb set the price of its newly approved melanoma drug ipilimumab—brand name Yervoy—at $120,000 for a course of therapy. The drug was associated with an incremental increase in life expectancy of four months. Drugs like ipilimumab have fueled the perception that the launch prices of new anticancer drugs and other drugs in the so-called "specialty" pharmaceutical market have been increasing over time and that increases are unrelated to the magnitude of the expected health benefits. In this paper, we discuss the unique features of the market for anticancer drugs and assess trends in the launch prices for 58 anticancer drugs approved between 1995 and 2013 in the United States. We restrict attention to anticancer drugs because the use of median survival time as a primary outcome measure provides a common, objective scale for quantifying the incremental benefit of new products. We find that the average launch price of anticancer drugs, adjusted for inflation and health benefits, increased by 10 percent annually —or an average of $8,500 per year—from 1995 to 2013. We argue that the institutional features of the market for anticancer drugs enable manufacturers to set the prices of new products at or slightly above the prices of existing therapies, giving rise to an upward trend in launch prices. Government-mandated price discounts for certain classes of buyers may have also contributed to launch price increases as firms sought to offset the growth in the discount segment by setting higher prices for the remainder of the market.

### The Window Tax: A Case Study in Excess Burden

- Journal of Economic Perspectives---2015---Wallace Oates,Robert M. Schwab

The window tax provides a dramatic and transparent historical example of the potential distorting effects of taxation. Imposed in England in 1696, the tax—a kind of predecessor of the modern property tax—was levied on dwellings with the tax liability based on the number of windows. The tax led to efforts to reduce tax bills through such measures as the boarding up of windows and the construction of houses with very few windows. In spite of the pernicious health and aesthetic effects and despite widespread protests, the tax persisted for over a century and a half: it was finally repealed in 1851. Our purpose in this paper is threefold. First, we provide a brief history of the tax with a discussion of its rationale, its role in the British fiscal system, and its economic and political ramifications. Second, we have assembled a dataset from microfilms of local tax records during this period that indicate the numbers of windows in individual dwellings. Drawing on these data, we are able to test some basic hypotheses concerning the effect of the tax on the number of windows and to calculate an admittedly rough measure of the excess burden associated with the window tax. Third, we have in mind a pedagogical objective. The concept of excess burden (or "deadweight loss") is for economists part of the meat and potatoes of tax analysis. But to the laity the notion is actually rather arcane; public-finance economists often have some difficulty, for example, in explaining to taxpayers the welfare costs of tax-induced distortions in resource allocation. The window tax is a textbook example of how a tax can have serious adverse side effects on social welfare. In addition to its objectionable consequences for tax equity, the window tax resulted in obvious and costly misallocations of resources.

### Matthew Gentzkow, Winner of the 2014 Clark Medal

- Journal of Economic Perspectives---2015---Andrei Shleifer

The 2014 John Bates Clark Medal of the American Economic Association was awarded to Matthew Gentzkow of the University of Chicago Booth School of Business. The citation recognized Matt's "fundamental contributions to our understanding of the economic forces driving the creation of media products, the changing nature and role of media in the digital environment, and the effect of media on education and civic engagement." In addition to his work on the media, Matt has made a number of significant contributions to empirical industrial organization more broadly, as well as to applied economic theory. In this essay, I highlight some of these contributions.

### Retrospectives: The Marginal Cost Controversy

- Journal of Economic Perspectives---2015---Brett M. Frischmann,Christiaan Hogendorn

From 1938 to 1950, there was a spirited debate about whether decreasing-average-cost industries should set prices at marginal cost, with attendant subsidies if necessary. In 1938, Harold Hotelling published a forceful and far-reaching proposal for marginal cost pricing entitled "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates." After several years and many pages of discussion, Ronald Coase gave a name and a clear formulation to the debate in his 1946 article "The Marginal Cost Controversy." We will tell much of the story of this controversy by comparing the frameworks of Hotelling and Coase, while also bringing in other contributors and offering some thoughts about contemporary relevance. The arguments marshaled by Coase (and his contemporaries) not only succeeded in this particular debate, as we shall see, but more generally served as part of the foundation for various fields of modern economics, particularly institutional, regulatory, and public choice economics as well as law and economics. Yet the underlying issues are quite difficult to resolve, and the strengths and weaknesses of the arguments for marginal cost pricing can turn on specific elements of the industry.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2015---Timothy Taylor

### Fair Trade Coffee: Correspondence

- Journal of Economic Perspectives---2015---Victor Claar,Colleen E. Haight

### Networks in the Understanding of Economic Behaviors

- Journal of Economic Perspectives---2014---Matthew Jackson

As economists endeavor to build better models of human behavior, they cannot ignore that humans are fundamentally a social species with interaction patterns that shape their behaviors. People's opinions, which products they buy, whether they invest in education, become criminals, and so forth, are all influenced by friends and acquaintances. Ultimately, the full network of relationships- how dense it is, whether some groups are segregated, who sits in central positions- affects how information spreads and how people behave. Increased availability of data coupled with increased computing power allows us to analyze networks in economic settings in ways not previously possible. In this paper, I describe some of the ways in which networks are helping economists to model and understand behavior. I begin with an example that demonstrates the sorts of things that researchers can miss if they do not account for network patterns of interaction. Next I discuss a taxonomy of network properties and how they impact behaviors. Finally, I discuss the problem of developing tractable models of network formation.

### From Micro to Macro via Production Networks

- Journal of Economic Perspectives---2014---Vasco Carvalho

A modern economy is an intricately linked web of specialized production units, each relying on the flow of inputs from their suppliers to produce their own output which, in turn, is routed towards other downstream units. In this essay, I argue that this network perspective on production linkages can offer novel insights on how local shocks occurring along this production network can propagate across the economy and give rise to aggregate fluctuations. First, I discuss how production networks can be mapped to a standard general equilibrium setup. In particular, through a series of stylized examples, I demonstrate how the propagation of sectoral shocks- and hence aggregate volatility- depends on different arrangements of production, that is, on different "shapes" of the underlying production network. Next I explore, from a network perspective, the empirical properties of a large-scale production network as given by detailed US input-output data. Finally I address how theory and data on production networks can be usefully combined to shed light on comovement and aggregate fluctuations.

### Community Networks and the Process of Development

- Journal of Economic Perspectives---2014---Kaivan Munshi

My objective in this paper is to lay the groundwork for a new network-based theory of economic development. The first step is to establish that community-based networks are active throughout the developing world. Plenty of anecdotal and descriptive evidence supports this claim. However, showing that these networks improve the economic outcomes of their members is more of a challenge. Over the course of the paper, I will present multiple strategies that have been employed to directly or indirectly identify network effects. The second step is to look beyond a static role for community networks, one of overcoming market failures and improving the outcomes of their members in the short-run, to examine how these informal institutions can support group mobility. A voluminous literature documents the involvement of communities in internal and international migration, both historically and in the contemporary economy. As with the static analysis, the challenge here is to show statistically that community networks directly support the movement of groups of individuals. I will show how predictions from the theory can be used to infer a link between networks and migration in very different contexts.

### How Can Scandinavians Tax So Much?

- Journal of Economic Perspectives---2014---Henrik Jacobsen Kleven

American visitors to Scandinavian countries are often puzzled by what they observe: despite large income redistribution through distortionary taxes and transfers, these are very high-income countries. They rank among the highest in the world in terms of income per capita, as well as most other economic and social outcomes. The economic and social success of Scandinavia poses important questions for economics and for those arguing against large redistribution based on its supposedly detrimental effect on economic growth and welfare. How can Scandinavian countries raise large amounts of tax revenue for redistribution and social insurance while maintaining some of the strongest economic outcomes in the world? Combining micro and macro evidence, this paper identifies three policies that can help explain this apparent anomaly: the coverage of third-party information reporting (ensuring a low level of tax evasion), the broadness of tax bases (ensuring a low level of tax avoidance), and the strong subsidization of goods that are complementary to working (ensuring a high level of labor force participation). The paper also presents descriptive evidence on a variety of social and cultural indicators that may help in explaining the economic and social success of Scandinavia.

### Why Do Developing Countries Tax So Little?

- Journal of Economic Perspectives---2014---Timothy Besley,Torsten Persson

Low-income countries typically collect taxes of between 10 to 20 percent of GDP while the average for high-income countries is more like 40 percent. In order to understand taxation, economic development, and the relationships between them, we need to think about the forces that drive the development process. Poor countries are poor for certain reasons, and these reasons can also help to explain their weakness in raising tax revenue. We begin by laying out some basic relationships regarding how tax revenue as a share of GDP varies with per capita income and with the breadth of a country's tax base. We sketch a baseline model of what determines a country's tax revenue as a share of GDP. We then turn to our primary focus: why do developing countries tax so little? We begin with factors related to the economic structure of these economies. But we argue that there is also an important role for political factors, such as weak institutions, fragmented polities, and a lack of transparency due to weak news media. Moreover, sociological and cultural factors- such as a weak sense of national identity and a poor norm for compliance- may stifle the collection of tax revenue. In each case, we suggest the need for a dynamic approach that encompasses the two-way interactions between these political, social, and cultural factors and the economy.

### Taxing across Borders: Tracking Personal Wealth and Corporate Profits

- Journal of Economic Perspectives---2014---Gabriel Zucman

This article attempts to estimate the magnitude of corporate tax avoidance and personal tax evasion through offshore tax havens. US corporations book 20 percent of their profits in tax havens, a tenfold increase since the 1980; their effective tax rate has declined from 30 to 20 percent over the last 15 years, and about two-thirds of this decline can be attributed to increased international tax avoidance. Globally, 8 percent of the world's personal financial wealth is held offshore, costing more than $200 billion to governments every year. Despite ambitious policy initiatives, profit shifting to tax havens and offshore wealth are rising. I discuss the recent proposals made to address these issues, and I argue that the main objective should be to create a world financial registry.

### Tax Morale

- Journal of Economic Perspectives---2014---Erzo Luttmer,Monica Singhal

There is an apparent disconnect between much of the academic literature on tax compliance and the administration of tax policy. In the benchmark economic model, the key policy parameters affecting tax evasion are the tax rate, the detection probability, and the penalty imposed conditional on the evasion being detected. Meanwhile, tax administrators also tend to place a great deal of emphasis on the importance of improving "tax morale," by which they generally mean increasing voluntary compliance with tax laws and creating a social norm of compliance. We will define tax morale broadly to include nonpecuniary motivations for tax compliance as well as factors that fall outside the standard, expected utility framework. Tax morale does indeed appear to be an important component of compliance decisions. We demonstrate that tax morale operates through a variety of underlying mechanisms, drawing on evidence from laboratory studies, natural experiments, and an emerging literature employing randomized field experiments. We consider the implications for tax policy and attempt to understand why recent interventions designed to improve morale, and thereby compliance, have had mixed results to date.

### The Economics of Guilds

- Journal of Economic Perspectives---2014---Sheilagh Ogilvie

Occupational guilds in medieval and early modern Europe offered an effective institutional mechanism whereby two powerful groups, guild members and political elites, could collaborate in capturing a larger slice of the economic pie and redistributing it to themselves at the expense of the rest of the economy. Guilds provided an organizational mechanism for groups of businessmen to negotiate with political elites for exclusive legal privileges that allowed them to reap monopoly rents. Guild members then used their guilds to redirect a share of these rents to political elites in return for support and enforcement. In short, guilds enabled their members and political elites to negotiate a way of extracting rents in the manufacturing and commercial sectors, rents that neither party could have extracted on its own. First, I provide an overview of where and when European guilds arose, what occupations they encompassed, how large they were, and how they varied across time and space. I then examine how guild activities affected market competition, commercial security, contract enforcement, product quality, human capital, and technological innovation. The historical findings on guilds provide strong support for the view that institutions arise and survive for centuries not because they are efficient but because they serve the distributional interests of powerful groups.

### The Wages of Sinistrality: Handedness, Brain Structure, and Human Capital Accumulation

- Journal of Economic Perspectives---2014---Joshua Goodman

Left- and right-handed individuals have different neurological wiring, particularly with regard to language processing. Multiple datasets from the United States and the United Kingdom show that lefties exhibit significant human capital deficits relative to righties. Lefties score 0.1 standard deviations lower on cognitive skill measures, have more behavioral problems, have more learning disabilities such as dyslexia, complete less schooling, and work in occupations requiring less cognitive skill. Most strikingly, lefties have 10-12 percent lower annual earnings than righties, much of which can be explained by observable differences in cognitive skills and behavioral problems. Lefties work in more manually intensive occupations than do righties, further suggesting their primary labor market disadvantage is cognitive rather then physical. I argue here that handedness can be used to explore the long-run impacts of differential brain structure generated in part by genetics and in part by poor infant health.

### Retrospectives: The Cold-War Origins of the Value of Statistical Life

- Journal of Economic Perspectives---2014---Spencer Banzhaf

This paper traces the history of the "Value of Statistical Life" (VSL), which today is used routinely in benefit-cost analysis of life-saving investments. The "value of statistical life" terminology was introduced by Thomas Schelling (1968) in his essay, "The Life You Save May Be Your Own." Schelling made the crucial move to think in terms of risk rather than individual lives, with the hope to dodge the moral thicket of valuing "life." But as recent policy debates have illustrated, his move only thickened it. Tellingly, interest in the subject can be traced back another twenty years before Schelling's essay to a controversy at RAND Corporation following its earliest application of operations research to defense planning. RAND wanted to avoid valuing pilot's lives but the Air Force insisted they confront the issue. Thus, the VSL is not only well acquainted with political controversy; it was born from it.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2014---Timothy Taylor

### The Missing Middle: Correspondence

- Journal of Economic Perspectives---2014---James Tybout

### The Role of Entrepreneurship in US Job Creation and Economic Dynamism

- Journal of Economic Perspectives---2014---Ryan Decker,John Haltiwanger,Ron Jarmin,Javier Miranda

An optimal pace of business dynamics—encompassing the processes of entry, exit, expansion, and contraction —would balance the benefits of productivity and economic growth against the costs to firms and workers associated with reallocation of productive resources. It is difficult to prescribe what the optimal pace should be, but evidence accumulating from multiple datasets and methodologies suggests that the rate of business startups and the pace of employment dynamism in the US economy has fallen over recent decades and that this downward trend accelerated after 2000. A critical factor in accounting for the decline in business dynamics is a lower rate of business startups and the related decreasing role of dynamic young businesses in the economy. For example, the share of US employment accounted for by young firms has declined by almost 30 percent over the last 30 years. These trends suggest that incentives for entrepreneurs to start new firms in the United States have diminished over time. We do not identify all the factors underlying these trends in this paper but offer some clues based on the empirical patterns for specific sectors and geographic regions.

### Entrepreneurship as Experimentation

- Journal of Economic Perspectives---2014---William Kerr,Ramana Nanda,Matthew Rhodes-Kropf

Entrepreneurship research is on the rise but many questions about the fundamental nature of entrepreneurship still exist. We argue that entrepreneurship is about experimentation; the probabilities of success are low, extremely skewed, and unknowable until an investment is made. At a macro level, experimentation by new firms underlies the Schumpeterian notion of creative destruction. However, at a micro level, investment and continuation decisions are not always made in a competitive Darwinian contest. Instead, a few investors make decisions that are impacted by incentive, agency, and coordination problems, often before a new idea even has a chance to compete in a market. We contend that costs and constraints on the ability to experiment alter the type of organizational form surrounding innovation and influence when innovation is more likely to occur. These factors not only govern how much experimentation is undertaken in the economy, but also the trajectory of experimentation, with potentially very deep economic consequences.

### Seeking the Roots of Entrepreneurship: Insights from Behavioral Economics

- Journal of Economic Perspectives---2014---Thomas Astebro,Holger Herz,Ramana Nanda,Roberto Weber

There is a growing body of evidence that many entrepreneurs seem to enter and persist in entrepreneurship despite earning low risk-adjusted returns. This has lead to attempts to provide explanations—using both standard economic theory and behavioral economics—for why certain individuals may be attracted to such an apparently unprofitable activity. Drawing on research in behavioral economics, in the sections that follow, we review three sets of possible interpretations for understanding the empirical facts related to the entry into, and persistence in, entrepreneurship. Differences in risk aversion provide a plausible and intuitive interpretation of entrepreneurial activity. In addition, a growing literature has begun to highlight the potential importance of overconfidence in driving entrepreneurial outcomes. Such a mechanism may appear at face value to work like a lower level of risk aversion, but there are clear conceptual differences—in particular, overconfidence likely arises from behavioral biases and misperceptions of probability distributions. Finally, nonpecuniary taste-based factors may be important in motivating both the decisions to enter into and to persist in entrepreneurship.

### The Lewis Model: A 60-Year Retrospective

- Journal of Economic Perspectives---2014---Douglas Gollin

The Lewis model has remained, for more than half a century, one of the dominant theories of development economics. This paper argues that the power of the model lies in the simplicity of its central insight: that poor countries contain enclaves of economic activity just as rich countries contain enclaves of poverty; and that a proximate explanation for the difference in income per capita across countries is that there are large differences in the relative sizes of their "modern" and "traditional" sectors. But while the Lewis model contains a powerful and compelling macro narrative, its details have proved somewhat elusive to scholars and students who have followed, and its policy implications are unclear. This paper identifies several key insights of the Lewis model, discusses several different interpretations of the model, and then reviews modern evidence for the central propositions of the model. In closing, we consider the relevance of Lewis for current thinking about development strategies and policies.

### The Missing ”Missing Middle”

- Journal of Economic Perspectives---2014---Chang-Tai Hsieh,Benjamin Olken

Although a large literature seeks to explain the "missing middle" of mid-sized firms in developing countries, there is surprisingly little empirical backing for existence of the missing middle. Using microdata on the full distribution of both formal and informal sector manufacturing firms in India, Indonesia, and Mexico, we document three facts. First, while there are a very large number of small firms, there is no "missing middle" in the sense of a bimodal distribution: mid-sized firms are missing, but large firms are missing too, and the fraction of firms of a given size is smoothly declining in firm size. Second, we show that the distribution of average products of capital and labor is unimodal, and that large firms, not small firms, have higher average products. This is inconsistent with many models explaining "the missing middle" in which small firms with high returns are constrained from expanding. Third, we examine regulatory and tax notches in India, Indonesia, and Mexico of the sort often thought to discourage firm growth and find no economically meaningful bunching of firms near the notch points. We show that existing beliefs about the missing middle are largely due to arbitrary transformations that were made to the data in previous studies.

### Informality and Development

- Journal of Economic Perspectives---2014---Rafael La Porta,Andrei Shleifer

In developing countries, informal firms account for up to half of economic activity. They provide livelihood for billions of people. Yet their role in economic development remains controversial with some viewing informality as pent-up potential and others viewing informality as a parasitic organizational form that hinders economic growth. In this paper, we assess these perspectives. We argue that the evidence is most consistent with dual models, in which informality arises out of poverty and the informal and formal sectors are very different. It seems that informal firms have low productivity and produce low- quality products; and, consequently, they do not pose a threat to the formal firms. Economic growth comes from the formal sector, that is, from firms run by educated entrepreneurs and exhibiting much higher levels of productivity. The expansion of the formal sector leads to the decline of the informal sector in relative and eventually absolute terms. A few informal firms convert to formality, but more generally they disappear because they cannot compete with the much more-productive formal firms.

### Do Poverty Traps Exist? Assessing the Evidence

- Journal of Economic Perspectives---2014---Aart Kraay,David McKenzie

A "poverty trap" can be understood as a set of self-reinforcing mechanisms whereby countries start poor and remain poor: poverty begets poverty, so that current poverty is itself a direct cause of poverty in the future. The idea of a poverty trap has this striking implication for policy: much poverty is needless, in the sense that a different equilibrium is possible and one-time policy efforts to break the poverty trap may have lasting effects. But what does the modern evidence suggest about the extent to which poverty traps exist in practice and the underlying mechanisms that may be involved? The main mechanisms we examine include S-shaped savings functions at the country level; "big-push" theories of development based on coordination failures; hunger-based traps which rely on physical work capacity rising nonlinearly with food intake at low levels; and occupational poverty traps whereby poor individuals who start businesses that are too small will be trapped earning subsistence returns. We conclude that these types of poverty traps are rare and largely limited to remote or otherwise disadvantaged areas. We discuss behavioral poverty traps as a recent area of research, and geographic poverty traps as the most likely form of a trap. The resulting policy prescriptions are quite different from the calls for a big push in aid or an expansion of microfinance. The more-likely poverty traps call for action in less-traditional policy areas such as promoting more migration.

### Page Limits on Economics Articles: Evidence from Two Journals

- Journal of Economic Perspectives---2014---David Card,Stefano DellaVigna

Over the past four decades the median length of the papers published in the "top five" economic journals has grown by nearly 300 percent. We study the effects of a page limit policy introduced by the American Economic Review (AER) in mid-2008 and subsequently adopted by the Journal of the European Economic Association (JEEA) in 2009. We find that the imposition of a 40-page limit on submissions led to no change in the flow of new papers to the AER. Instead, authors responded by shortening and reformatting their papers. For JEEA, in contrast, we conclude that the page-limit policy led authors of longer papers to submit to other journals. These results imply that the AER has substantial monopoly power over submissions, while JEEA faces a very competitive market. Evidence from both journals, and from citations to published papers in the top journals, suggests that longer papers are of higher quality than shorter papers, so the loss of longer submissions at JEEA may have led to a drop in quality. Despite a modest impact of the AER's policy on the average length of submissions, the policy had little or no effect on the length of final accepted manuscripts.

### What Policies Increase Prosocial Behavior? An Experiment with Referees at the Journal of Public Economics

- Journal of Economic Perspectives---2014---Raj Chetty,Emmanuel Saez,László Sándor

We evaluate policies to increase prosocial behavior using a field experiment with 1,500 referees at the Journal of Public Economics. We randomly assign referees to four groups: a control group with a six-week deadline to submit a referee report; a group with a four-week deadline; a cash incentive group rewarded with $100 for meeting the four-week deadline; and a social incentive group in which referees were told that their turnaround times would be publicly posted. We obtain four sets of results. First, shorter deadlines reduce the time referees take to submit reports substantially. Second, cash incentives significantly improve speed, especially in the week before the deadline. Cash payments do not crowd out intrinsic motivation: after the cash treatment ends, referees who received cash incentives are no slower than those in the four-week deadline group. Third, social incentives have smaller but significant effects on review times and are especially effective among tenured professors, who are less sensitive to deadlines and cash incentives. Fourth, all the treatments have little or no effect on rates of agreement to review, quality of reports, or review times at other journals. We conclude that small changes in journals' policies could substantially expedite peer review at little cost. More generally, price incentives, nudges, and social pressure are effective and complementary methods of increasing prosocial behavior.

### The Effects of an Anti-grade-Inflation Policy at Wellesley College

- Journal of Economic Perspectives---2014---Kristin Butcher,Patrick McEwan,Akila Weerapana

Average grades in colleges and universities have risen markedly since the 1960s. Critics express concern that grade inflation erodes incentives for students to learn; gives students, employers, and graduate schools poor information on absolute and relative abilities; and reflects the quid pro quo of grades for better student evaluations of professors. This paper evaluates an anti-grade-inflation policy that capped most course averages at a B+. The cap was biding for high-grading departments (in the humanities and social sciences) and was not binding for low-grading departments (in economics and sciences), facilitating a difference-in-differences analysis. Professors complied with the policy by reducing compression at the top of the grade distribution. It had little effect on receipt of top honors, but affected receipt of magna cum laude. In departments affected by the cap, the policy expanded racial gaps in grades, reduced enrollments and majors, and lowered student ratings of professors.

### The Research Productivity of New PhDs in Economics: The Surprisingly High Non-success of the Successful

- Journal of Economic Perspectives---2014---John Conley,Ali Onder

We study the research productivity of new graduates from North American PhD programs in economics from 1986 to 2000. We find that research productivity drops off very quickly with class rank at all departments, and that the rank of the graduate departments themselves provides a surprisingly poor prediction of future research success. For example, at the top ten departments as a group, the median graduate has fewer than 0.03 American Economic Review (AER)-equivalent publications at year six after graduation, an untenurable record almost anywhere. We also find that PhD graduates of equal percentile rank from certain lower-ranked departments have stronger publication records than their counterparts at higher-ranked departments. In our data, for example, Carnegie Mellon's graduates at the 85th percentile of year-six research productivity outperform 85th percentile graduates of the University of Chicago, the University of Pennsylvania, Stanford, and Berkeley. These results suggest that even the top departments are not doing a very good job of training the great majority of their students to be successful research economists. Hiring committees may find these results helpful when trying to balance class rank and place of graduate in evaluating job candidates, and current graduate students may wish to re-evaluate their academic strategies in light of these findings.

### The Economics of Fair Trade

- Journal of Economic Perspectives---2014---Raluca Dragusanu,Daniele Giovannucci,Nathan Nunn

Fair Trade is a labeling initiative aimed at improving the lives of the poor in developing countries by offering better terms to producers and helping them to organize. Although Fair Trade–certified products still comprise a small share of the market—for example, Fair Trade–certified coffee exports were 1.8 percent of global coffee exports in 2009—growth has been very rapid over the past decade. Whether Fair Trade can achieve its intended goals has been hotly debated in academic and policy circles. In particular, debates have been waged about whether Fair Trade makes "economic sense" and is sustainable in the long run. The aim of this article is to provide a critical overview of the economic theory behind Fair Trade, describing the potential benefits and potential pitfalls. We also provide an assessment of the empirical evidence of the impacts of Fair Trade to date. Because coffee is the largest single product in the Fair Trade market, our discussion here focuses on the specifics of this industry, although we will also point out some important differences with other commodities as they arise.

### Evaluating Counterterrorism Spending

- Journal of Economic Perspectives---2014---John Mueller,Mark G. Stewart

In this article, we present a simple back-of-the-envelope approach for evaluating whether counterterrorism security measures reduce risk sufficiently to justify their costs. The approach uses only four variables: the consequences of a successful attack, the likelihood of a successful attack, the degree to which the security measure reduces risk, and the cost of the security measure. After measuring the cost of a counterterrorism measure, we explore a range of outcomes for the costs of terrorist attacks and a range of possible estimates for how much risk might be reduced by the measure. Then working from this mix of information and assumptions, we can calculate how many terrorist attacks (and of what size) would need to be averted to justify the cost of the counterterrorism measure in narrow cost-benefit terms. To illustrate this approach, we first apply it to the overall increases in domestic counterterrorism expenditures that have taken place since the terrorist attacks of September 11, 2001, and alternatively we apply it to just the FBI's counterterrorism efforts. We then evaluate evidence on the number and size of terrorist attacks that have actually been averted or might have been averted since 9/11.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2014---Timothy Taylor

### Big Data: New Tricks for Econometrics

- Journal of Economic Perspectives---2014---Hal R. Varian

Computers are now involved in many economic transactions and can capture data associated with these transactions, which can then be manipulated and analyzed. Conventional statistical and econometric techniques such as regression often work well, but there are issues unique to big datasets that may require different tools. First, the sheer size of the data involved may require more powerful data manipulation tools. Second, we may have more potential predictors than appropriate for estimation, so we need to do some kind of variable selection. Third, large datasets may allow for more flexible relationships than simple linear models. Machine learning techniques such as decision trees, support vector machines, neural nets, deep learning, and so on may allow for more effective ways to model complex relationships. In this essay, I will describe a few of these tools for manipulating and analyzing big data. I believe that these methods have a lot to offer and should be more widely known and used by economists.

### High-Dimensional Methods and Inference on Structural and Treatment Effects

- Journal of Economic Perspectives---2014---Alexandre Belloni,Victor Chernozhukov,Christian Hansen

Data with a large number of variables relative to the sample size?"high-dimensional data"?are readily available and increasingly common in empirical economics. High-dimensional data arise through a combination of two phenomena. First, the data may be inherently high dimensional in that many different characteristics per observation are available. For example, the US Census collects information on hundreds of individual characteristics and scanner datasets record transaction-level data for households across a wide range of products. Second, even when the number of available variables is relatively small, researchers rarely know the exact functional form with which the small number of variables enter the model of interest. Researchers are thus faced with a large set of potential variables formed by different ways of interacting and transforming the underlying variables. This paper provides an overview of how innovations in "data mining"? can be adapted and modified to provide high-quality inference about model parameters. Note that we use the term "data mining" in a modern sense which denotes a principled search for "true" predictive power that guards against false discovery and overfitting, does not erroneously equate in-sample fit to out-of-sample predictive ability, and accurately accounts for using the same data to examine many different hypotheses or models.

### Political Campaigns and Big Data

- Journal of Economic Perspectives---2014---David W. Nickerson,Todd Rogers

Modern campaigns develop databases of detailed information about citizens to inform electoral strategy and to guide tactical efforts. Despite sensational reports about the value of individual consumer data, the most valuable information campaigns acquire comes from the behaviors and direct responses provided by citizens themselves. Campaign data analysts develop models using this information to produce individual-level predictions about citizens' likelihoods of performing certain political behaviors, of supporting candidates and issues, and of changing their support conditional on being targeted with specific campaign interventions. The use of these predictive scores has increased dramatically since 2004, and their use could yield sizable gains to campaigns that harness them. At the same time, their widespread use effectively creates a coordination game with incomplete information between allied organizations. As such, organizations would benefit from partitioning the electorate to not duplicate efforts, but legal and political constraints preclude that possibility.

### Privacy and Data-Based Research

- Journal of Economic Perspectives---2014---Ori Heffetz,Katrina Ligett

What can we, as users of microdata, formally guarantee to the individuals (or firms) in our dataset, regarding their privacy? We retell a few stories, well-known in data-privacy circles, of failed anonymization attempts in publicly released datasets. We then provide a mostly informal introduction to several ideas from the literature on differential privacy, an active literature in computer science that studies formal approaches to preserving the privacy of individuals in statistical databases. We apply some of its insights to situations routinely faced by applied economists, emphasizing big-data contexts.

### Slicing Up Global Value Chains

- Journal of Economic Perspectives---2014---Marcel Timmer,Abdul Azeez Erumban,Bart Los,Robert Stehrer,Gaaitzen de Vries

In this paper, we "slice up the global value chain" using a decomposition technique that has recently become feasible due to the development of the World Input-Output Database. We trace the value added by all labor and capital that is directly and indirectly needed for the production of final manufacturing goods. The production systems of these goods are highly prone to international fragmentation as many stages can be undertaken in any country with little variation in quality. We seek to establish a series of facts concerning the global fragmentation of production that can serve as a starting point for future analysis. We describe four major trends. First, international fragmentation, as measured by the foreign value-added content of production, has rapidly increased since the early 1990s. Second, in most global value chains there is a strong shift towards value being added by capital and high-skilled labor, and away from less-skilled labor. Third, within global value chains, advanced nations increasingly specialize in activities carried out by high-skilled workers. Fourth, emerging economies surprisingly specialize in capital-intensive activities.

### Five Facts about Value-Added Exports and Implications for Macroeconomics and Trade Research

- Journal of Economic Perspectives---2014---Robert Johnson

Due to the rise of global supply chains, gross exports do not accurately measure the amount of value added exchanged between countries. I highlight five facts about differences between gross and value-added exports. These differences are large and growing over time, currently around 25 percent, and manufacturing trade looks more important, relative to services, in gross than value-added terms. These differences are also heterogenous across countries and bilateral partners, and changing unevenly across countries and partners over time. Taking these differences into account enables researchers to obtain better quantitative answers to important macroeconomic and trade questions. I discuss how the facts inform analysis of the transmission of shocks across countries; the mechanics of trade balance adjustments; the impact of frictions on trade; the role of endowments and comparative advantage; and trade policy.

### Raj Chetty: 2013 Clark Medal Recipient

- Journal of Economic Perspectives---2014---Martin Feldstein

Raj Chetty is eminently deserving of being awarded the John Bates Clark Medal at the age of 33. His research has transformed the field of public economics. His work is motivated by important public policy issues in the fields of taxation, social insurance, and public spending for education. He approaches his subjects with a creative redefinition of the problems that he studies, and his empirical methods often draw on experimental evidence or unprecedentedly large sets of integrated data. While his work is founded on basic microeconomics, he modifies this framework to take into account behavioral and institutional considerations. Chetty is a prolific scholar. It is difficult to summarize all of Chetty's research or even to capture the details of his most significant papers. I have therefore chosen a selection of Chetty's important papers dealing with taxation, social insurance, and education that contributed to his selection as the winner of the John Bates Clark Medal.

### Fluctuations in Uncertainty

- Journal of Economic Perspectives---2014---Nicholas Bloom

Uncertainty is an amorphous concept. It reflects uncertainty in the minds of consumers, managers, and policymakers about possible futures. It is also a broad concept, including uncertainty over the path of macro phenomena like GDP growth, micro phenomena like the growth rate of firms, and noneconomic events like war and climate change. In this essay, I address four questions about uncertainty. First, what are some facts and patterns about economic uncertainty? Both macro and micro uncertainty appear to rise sharply in recessions and fall in booms. Uncertainty also varies heavily across countries?developing countries appear to have about one-third more macro uncertainty than developed countries. Second, why does uncertainty vary during business cycles? Third, do fluctuations in uncertainty affect behavior? Fourth, has higher uncertainty worsened the Great Recession and slowed the recovery? Much of this discussion is based on research on uncertainty from the last five years, reflecting the recent growth of the literature.

### The Market for Blood

- Journal of Economic Perspectives---2014---Robert Slonim,Carmen Wang,Ellen Garbarino

Donating blood, "the gift of life," is among the noblest activities and it is performed worldwide nearly 100 million times annually. The economic perspective presented here shows how the gift of life, albeit noble and often motivated by altruism, is heavily influenced by standard economic forces including supply and demand, economies of scale, and moral hazard. These forces, shaped by technological advances, have driven the evolution of blood donation markets from thin one-to-one "marriage markets" in which each recipient needed a personal blood donor, to thick, impersonalized, diffuse markets. Today, imbalances between aggregate supply and demand are a major challenge in blood markets, including excess supply after disasters and insufficient supply at other times. These imbalances are not unexpected given that the blood market operates without market prices and with limited storage length (about six weeks) for whole blood. Yet shifting to a system of paying blood donors seems a practical impossibility given attitudes toward paying blood donors and concerns that a paid system could compromise blood safety. Nonetheless, we believe that an economic perspective offers promising directions to increase supply and improve the supply and demand balance even in the presence of volunteer supply and with the absence of market prices.

### Retrospectives: The Cyclical Behavior of Labor Productivity and the Emergence of the Labor Hoarding Concept

- Journal of Economic Perspectives---2014---Jeff Biddle

The concept of "labor hoarding," at least in its modern form, was first fully articulated in the early 1960s by Arthur Okun (1963). By the end of the 20th century, the concept of "labor hoarding" had become an accepted part of economists' explanations of the workings of labor markets and of the relationship between labor productivity and economic fluctuations. The emergence of this concept involved the conjunction of three key elements: the fact that measured labor productivity was found to be procyclical, rising during expansions and falling during contractions; a perceived contradiction with the theory of the neoclassical firm in a competitive economy; and a possible explanation based on optimizing behavior on the part of firms. Each of these three elements?fact, contradiction, and explanation?has a history of its own, dating back to at least the opening decades of the twentieth century. Telling the story of the emergence of the modern labor hoarding concept requires recounting these three histories, histories that involve the work of economists motivated by diverse purposes and often not mainly, if at all, concerned with the questions that the labor hoarding concept was ultimately used to address. As a final twist to the story, the long-standing positive relationship between labor productivity and output in the US economy began to disappear in the late 1980s; and during the Great Recession, labor productivity rose while the economy contracted.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2014---Timothy Taylor

### Correction and Update: The Economic Effects of Climate Change

- Journal of Economic Perspectives---2014---Richard Tol

Gremlins intervened in the preparation of my paper "The Economic Effects of Climate Change" published in the Spring 2009 issue of this journal. In Table 1 of that paper, titled "Estimates of the Welfare Impact of Climate Change," minus signs were dropped from the two impact estimates, one by Plambeck and Hope (1996) and one by Hope (2006). In Figure 1 of that paper, titled "Fourteen Estimates of the Global Economic Impact of Climate Change," and in the various analyses that support that figure, the minus sign was dropped from only one of the two estimates. The corresponding Table 1 and Figure 1 presented here correct these errors. Figure 2 titled,"Twenty-One Estimates of the Global Economic Impact of Climate Change"? adds two overlooked estimates from before the time of the original 2009 paper and five more recent ones.

### Farewell to Notes

- Journal of Economic Perspectives---2014---Timothy Taylor

### US Manufacturing: Understanding Its Past and Its Potential Future

- Journal of Economic Perspectives---2014---Martin Neil Baily,Barry Bosworth

The development of the US manufacturing sector over the last half-century displays two striking and somewhat contradictory features: 1) the growth of real output in the US manufacturing sector, measured by real value added, has equaled or exceeded that of total GDP, keeping the manufacturing share of the economy constant in price-adjusted terms; and 2) there is a long-standing decline in the share of total employment attributable to manufacturing. The persistence of these trends seems inconsistent with stories of a recent or sudden crisis in the US manufacturing sector. After all, as recently as 2010, the United States had the world's largest manufacturing sector measured by its valued-added, and while it has now been surpassed by China, the United States remains a very large manufacturer. On the other hand, there are some potential causes for concern. First, though manufacturing's output share of GDP has remained stable over 50 years, and manufacturing retains a reputation as a sector of rapid productivity improvements, this is largely due to the spectacular performance of one subsector of manufacturing: computers and electronics. Second, recently there has been a large drop in the absolute level of manufacturing employment that many find alarming. Third, the US manufacturing sector runs an enormous trade deficit, equaling $460 billion in 2012, which is also very concentrated in trade with Asia. Finally, we consider the future evolution of the manufacturing sector and its importance for the US economy. Many of the largest US corporations continue to shift their production facilities overseas. It is important to understand why the United States is not perceived to be an attractive base for their production.

### Competing in Advanced Manufacturing: The Need for Improved Growth Models and Policies

- Journal of Economic Perspectives---2014---Gregory Tassey

The United States has underinvested for several decades in a set of productivity-enhancing assets necessary for the long-term health of its manufacturing sector. Conventional characterizations of the process of bringing new advanced manufacturing products to market usually leave out two important elements: One is "proof-of-concept research" to establish broad "technology platforms" that can then be used as a basis for developing actual products. The second is a technical infrastructure of "infratechnologies" that include the analytical tools and standards needed for measuring and classifying the components of the new technology; metrics and methods for determining the adequacy of the multiple performance attributes of the technology; and the interfaces among hardware and software components that must work together for a complex product to perform as specified. If the public?private dynamics are not properly aligned to encourage proof-of-concept research and needed infratechnologies, then promising advances in basic science can easily fall into a "valley of death" and fail to evolve into modern advanced manufacturing technologies that are ready for the marketplace. Each major technology has a degree of uniqueness that demands government support sufficiently sophisticated to allow efficient adaptation to the needs of its particular industry, whether semiconductors, pharmaceuticals, computers, communications equipment, medical equipment, or some other technology-based industry.

### Management Practices, Relational Contracts, and the Decline of General Motors

- Journal of Economic Perspectives---2014---Susan Helper,Rebecca Henderson

General Motors was once regarded as the best-managed and most successful firm in the world. However, between 1980 and 2009, GM's US market share fell from 46 to 20 percent, and in 2009 the firm went bankrupt. We argue that the conventional explanation for this decline?namely high legacy labor and healthcare costs?is seriously incomplete, and that GM's share collapsed for many of the same reasons that many highly successful American firms of the 1960s were forced from the market, including a failure to understand the nature of the competition they faced and an inability to respond effectively once they did. We focus particularly on the problems GM encountered in developing the relational contracts essential to modern design and manufacturing, and we discuss a number of possible causes for these difficulties. We suggest that GM's experience may have important implications for our understanding of the role of management in the modern, knowledge-based firm and for the potential revival of manufacturing in the United States.

### Global Biofuels: Key to the Puzzle of Grain Market Behavior

- Journal of Economic Perspectives---2014---Brian Wright

In the last half-decade, sharp jumps in the prices of wheat, rice, and corn, which furnish about two-thirds of the calorie requirements of mankind, have attracted worldwide attention. These price jumps in grains have also revealed the chaotic state of economic analysis of agricultural commodity markets. Economists and scientists have engaged in a blame game, apportioning percentages of responsibility for the price spikes to bewildering lists of factors, which include a surge in meat consumption, idiosyncratic regional droughts and fires, speculative bubbles, a new "financialization" of grain markets, the slowdown of global agricultural research spending, jumps in costs of energy, and more. Several observers have claimed to identify a "perfect storm" in the grain markets in 2007/2008, a confluence of some of the factors listed above. In fact, the price jumps since 2005 are best explained by the new policies causing a sustained surge in demand for biofuels. The rises in food prices since 2004 have generated huge wealth transfers to global landholders, agricultural input suppliers, and biofuels producers. The losers have been net consumers of food, including large numbers of the world's poorest peoples. The cause of this large global redistribution was no perfect storm. Far from being a natural catastrophe, it was the result of new policies to allow and require increased use of grain and oilseed for production of biofuels. Leading this trend were the wealthy countries, initially misinformed about the true global environmental and distributional implications.

### Agricultural Biotechnology: The Promise and Prospects of Genetically Modified Crops

- Journal of Economic Perspectives---2014---Geoffrey Barrows,Steven Sexton,David Zilberman

For millennia, humans have modified plant genes in order to develop crops best suited for food, fiber, feed, and energy production. Conventional plant breeding remains inherently random and slow, constrained by the availability of desirable traits in closely related plant species. In contrast, agricultural biotechnology employs the modern tools of genetic engineering to reduce uncertainty and breeding time and to transfer traits from more distantly related plants. Critics express concerns that the technology imposes negative environmental effects and jeopardizes the health of those who consume the "frankenfoods." Supporters emphasize potential gains from boosting output and lowering food prices for consumers. They argue that such gains are achieved contemporaneous with the adoption of farming practices that lower agrochemical use and lessen soil. The extensive experience with agricultural biotechnology since 1996 provides ample evidence with which to test the claims of supporters and opponents and to evaluate the prospects of genetic crop engineering. In this paper, we begin with an overview of the adoption of the first generation of agricultural biotechnology crops. We then look at the evidence on the effects of these crops: on output and prices, on the environment, and on consumer health. Finally, we consider intellectual property issues surrounding this new technology.

### Agriculture in the Global Economy

- Journal of Economic Perspectives---2014---Julian Alston,Philip Pardey

The past 50-100 years have witnessed dramatic changes in agricultural production and productivity, driven to a great extent by public and private investments in agricultural research, with profound implications especially for the world's poor. In this article, we first discuss how the high-income countries like the United States represent a declining share of global agricultural output while middle-income countries like China, India, Brazil, and Indonesia represent a rising share. We then look at the differing patterns of agricultural inputs across countries and the divergent productivity paths taken by their agricultural sectors. Next we examine productivity more closely and the evidence that the global rate of agricultural productivity growth is declining?with potentially serious prospects for the price and availability of food for the poorest people in the world. Finally we consider patterns of agricultural research and development efforts.

### American Farms Keep Growing: Size, Productivity, and Policy

- Journal of Economic Perspectives---2014---Daniel Sumner

Commercial agriculture in the United States is comprised of several hundred thousand farms, and these farms continue to become larger and fewer. The size of commercial farms is sometimes best-measured by sales, in other cases by acreage, and in still other cases by quantity produced of specific commodities, but for many commodities, size has doubled and doubled again in a generation. This article summarizes the economics of commercial agriculture in the United States, focusing on growth in farm size and other changes in size distribution in recent decades. I also consider the relationships between farm size distributions and farm productivity growth and farm subsidy policy.

### From Sick Man of Europe to Economic Superstar: Germany's Resurgent Economy

- Journal of Economic Perspectives---2014---Christian Dustmann,Bernd Fitzenberger,Uta Sch?nberg,Alexandra Spitz-Oener

In the late 1990s and into the early 2000s, Germany was often called "the sick man of Europe." Indeed, Germany's economic growth averaged only about 1.2

percent per year from 1998 to 2005, including a recession in 2003, and unemployment rates rose from 9.2 percent in 1998 to 11.1 percent in 2005. Today, after the Great Recession, Germany is described as an "economic superstar." In contrast to most of its European neighbors and the United States, Germany experienced almost no increase in unemployment during the Great Recession, despite a sharp decline in GDP in 2008 and 2009. Germany's exports reached an all-time record of $1.738 trillion in 2011, which is roughly equal to half of Germany's GDP, or 7.7 percent of world exports. Even the euro crisis seems not to have been able to stop Germany's strengthening economy and employment. How did Germany, with the fourth-largest GDP in the world transform itself from "the sick man of Europe" to an "economic superstar" in less than a decade? We present evidence that the specific governance structure of the German labor market institutions allowed them to react flexibly in a time of extraordinary economic circumstances, and that this distinctive characteristic of its labor market institutions has been the main reason for Germany's economic success over the last decade.

### When Ideas Trump Interests: Preferences, Worldviews, and Policy Innovations

- Journal of Economic Perspectives---2014---Dani Rodrik

Ideas are strangely absent from modern models of political economy. In most prevailing theories of policy choice, the dominant role is instead played by "vested interests"?elites, lobbies, and rent-seeking groups which get their way at the expense of the general public. Any model of political economy in which organized interests do not figure prominently is likely to remain vacuous and incomplete. But it does not follow from this that interests are the ultimate determinant of political outcomes. Here I will challenge the notion that there is a well-defined mapping from "interests" to outcomes. This mapping depends on many unstated assumptions about the ideas that political agents have about: 1) what they are maximizing, 2) how the world works, and 3) the set of tools they have at their disposal to further their interests. Importantly, these ideas are subject to both manipulation and innovation, making them part of the political game. There is, in fact, a direct parallel, as I will show, between inventive activity in technology, which economists now routinely make endogenous in their models, and investment in persuasion and policy innovation in the political arena. I focus specifically on models professing to explain economic inefficiency and argue that outcomes in such models are determined as much by the ideas that elites are presumed to have on feasible strategies as by vested interests themselves. A corollary is that new ideas about policy?or policy entrepreneurship?can exert an independent effect on equilibrium outcomes even in the absence of changes in the configuration of political power. I conclude by discussing the sources of new ideas.

### An Economist's Guide to Visualizing Data

- Journal of Economic Perspectives---2014---Jonathan A. Schwabish

Once upon a time, a picture was worth a thousand words. But with online news, blogs, and social media, a good picture can now be worth so much more. Economists who want to disseminate their research, both inside and outside the seminar room, should invest some time in thinking about how to construct compelling and effective graphics.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2014---Timothy Taylor

### A Century of US Central Banking: Goals, Frameworks, Accountability

- Journal of Economic Perspectives---2013---Ben Bernanke

Several key episodes in the 100-year history of the Federal Reserve have been referred to in various contexts with the adjective "Great" attached to them: the Great Experiment of the Federal Reserve's founding, the Great Depression, the Great Inflation and subsequent disinflation, the Great Moderation, and the recent Great Recession. Here, I'll use this sequence of "Great" episodes to discuss the evolution over the past 100 years of three key aspects of Federal Reserve policymaking: the goals of policy, the policy framework, and accountability and communication. The changes over time in these three areas provide a useful perspective, I believe, on how the role and functioning of the Federal Reserve have changed since its founding in 1913, as well as some lessons for the present and for the future.

### Central Bank Design

- Journal of Economic Perspectives---2013---Ricardo Reis

Starting with a blank slate, how could one design the institutions of a central bank for the United States? This paper explores the question of how to design a central bank, drawing on the relevant economic literature and historical experiences while staying free from concerns about how the Fed got to be what it is today or the short-term political constraints it has faced at various times. The goal is to provide an opinionated overview that puts forward the trade-offs associated with different choices and identifies areas where there are clear messages about optimal central bank design.

### The Federal Reserve and Panic Prevention: The Roles of Financial Regulation and Lender of Last Resort

- Journal of Economic Perspectives---2013---Gary Gorton,Andrew Metrick

This paper surveys the role of the Federal Reserve within the financial regulatory system, with particular attention to the interaction of the Fed's role as both a supervisor and a lender-of-last-resort. The institutional design of the Federal Reserve System was aimed at preventing banking panics, primarily due to the permanent presence of the discount window. This new system was successful at preventing a panic in the early 1920s, after which the Fed began to discourage the use of the discount window and intentionally create "stigma" for window borrowing -- policies that contributed to the panics of the Great Depression. The legislation of the New Deal era centralized Fed power in the Board of Governors, and over the next 75 years the Fed expanded its role as a supervisor of the largest banks. Nevertheless, prior to the recent crisis the Fed had large gaps in its authority as a supervisor and as lender of last resort, with the latter role weakened further by stigma. The Fed was unable to prevent the recent crisis, during which its lender of last resort function expanded significantly. As the Fed begins its second century, there are still great challenges to fulfilling its original intention of panic prevention.

### Shifts in US Federal Reserve Goals and Tactics for Monetary Policy: A Role for Penitence?

- Journal of Economic Perspectives---2013---Julio J. Rotemberg

This paper considers some of the large changes in the Federal Reserve's approach to monetary policy. It shows that, in some important cases, critics who were successful in arguing that past Fed approaches were responsible for mistakes that caused harm succeeded in making the Fed averse to these approaches. This can explain why the Fed stopped basing monetary policy on the quality of new bank loans, why it stopped being willing to cause recessions to deal with inflation, and why it was temporarily unwilling to maintain stable interest rates in the period 1979-1982. It can also contribute to explaining why monetary policy was tight during the Great Depression. The paper shows that the evolution of policy was much more gradual and flexible after the Volcker disinflation, when the Fed was not generally deemed to have made an error.

### Does the Federal Reserve Care about the Rest of the World?

- Journal of Economic Perspectives---2013---Barry Eichengreen

Many economists are accustomed to thinking about Federal Reserve policy in terms of the institution's "dual mandate," which refers to price stability and high employment, and in which the exchange rate and other international variables matter only insofar as they influence inflation and the output gap -- which is to say, not very much. In fact, this conventional view is heavily shaped by the distinctive and peculiar circumstances of the last three decades, when the influence of international considerations on Fed policy has been limited. In fact, the Federal Reserve paid significant attention to international considerations in its first two decades, followed by relative inattention to such factors in the two-plus decades that followed, then back to renewed attention to international aspects of monetary policy in the 1960s, before the recent period of benign neglect of the international dimension. I argue that in the next few decades, international aspects are likely to play a larger role in Federal Reserve policy making than at present.

### An Interview with Paul Volcker

- Journal of Economic Perspectives---2013---Martin Feldstein

Martin Feldstein interviewed Paul Volcker in Cambridge, Massachusetts, on July 10, 2013, as part of a conference at the National Bureau of Economic Research on "The First 100 Years of the Federal Reserve: The Policy Record, Lessons Learned, and Prospects for the Future." Volcker was Chairman of the Board of Governors of the Federal Reserve System from 1979 through 1987. Before that, he served stints as President of the Federal Reserve Bank of New York from 1975 to 1979, as Deputy Undersecretary for International Affairs in the US Department of the Treasury from 1969 to 1974, as Deputy Undersecretary for Monetary Affairs in the Treasury from 1963 to 1965, and as an economist at the Federal Reserve Bank of New York from 1952 to 1957. He has led and served on a wide array of commissions, including chairing the President's Economic Recovery Advisory Board from its inception in 2009 through 2011.

### Market Reasoning as Moral Reasoning: Why Economists Should Re-engage with Political Philosophy

- Journal of Economic Perspectives---2013---Michael J. Sandel

In my book What Money Can't Buy: The Moral Limits of Markets (2012), I try to show that market values and market reasoning increasingly reach into spheres of life previously governed by nonmarket norms. I argue that this tendency is troubling; putting a price on every human activity erodes certain moral and civic goods worth caring about. We therefore need a public debate about where markets serve the public good and where they don't belong. In this article, I would like to develop a related theme: When it comes to deciding whether this or that good should be allocated by the market or by nonmarket principles, economics is a poor guide. Deciding which social practices should be governed by market mechanisms requires a form of economic reasoning that is bound up with moral reasoning. But mainstream economic thinking currently asserts its independence from the contested terrain of moral and political philosophy. If economics is to help us decide where markets serve the public good and where they don't belong, it should relinquish the claim to be a value-neutral science and reconnect with its origins in moral and political philosophy.

### Reclaiming Virtue Ethics for Economics

- Journal of Economic Perspectives---2013---Luigino Bruni,Robert Sugden

Virtue ethics is an important strand of moral philosophy, and a significant body of philosophical work in virtue ethics is associated with a radical critique of the market economy and of economics. Expressed crudely, the charge sheet is this: The market depends on instrumental rationality and extrinsic motivation; market interactions therefore fail to respect the internal value of human practices and the intrinsic motivations of human actors; by using market exchange as its central model, economics normalizes extrinsic motivation, not only in markets but also in social life more generally;

therefore economics is complicit in an assault on virtue and on human flourishing. We will argue that this critique is flawed, both as a description of how markets actually work and as a representation of how classical and neoclassical economists have understood the market. We show how the market and economics can be defended against the critique from virtue ethics, and crucially, this defense is constructed using the language and logic of virtue ethics. Using the methods of virtue ethics and with reference to the writings of some major economists, we propose an understanding of the purpose (telos) of markets as cooperation for mutual benefit, and identify traits that thereby count as virtues for market participants. We conclude that the market need not be seen as a virtue-free zone.

### Gifts of Mars: Warfare and Europe's Early Rise to Riches

- Journal of Economic Perspectives---2013---Nico Voigtl?nder,Hans-Joachim Voth

Western Europe surged ahead of the rest of the world long before technological growth became rapid. Europe in 1500 already had incomes twice as high on a per capita basis as Africa, and one-third greater than most of Asia. In this essay, we explain how Europe's tumultuous politics and deadly penchant for warfare translated into a sustained advantage in per capita incomes. We argue that Europe's rise to riches was driven by the nature of its politics after 1350 -- it was a highly fragmented continent characterized by constant warfare and major religious strife. No other continent in recorded history fought so frequently, for such long periods, killing such a high proportion of its population. When it comes to destroying human life, the atomic bomb and machine guns may be highly efficient, but nothing rivaled the impact of early modern Europe's armies spreading hunger and disease. War therefore helped Europe's precocious rise to riches because the survivors had more land per head available for cultivation. Our interpretation involves a feedback loop from higher incomes to more war and higher land-labor ratios, a loop set in motion by the Black Death in the middle of the 14th century.

### The Economics of Slums in the Developing World

- Journal of Economic Perspectives---2013---Benjamin Marx,Thomas Stoker,Tavneet Suri

The global expansion of urban slums poses questions for economic research as well as problems for policymakers. We provide evidence that the type of poverty observed in contemporary slums of the developing world is characteristic of that described in the literature on poverty traps. We document how human capital threshold effects, investment inertia, and a "policy trap" may prevent slum dwellers from seizing economic opportunities offered by geographic proximity to the city. We test the assumptions of another theory -- that slums are a just transitory phenomenon characteristic of fastgrowing economies -- by examining the relationship between economic growth, urban growth, and slum growth in the developing world, and whether standards of living of slum dwellers are improving over time, both within slums and across generations. Finally, we discuss why standard policy approaches have often failed to mitigate the expansion of slums in the developing world. Our aim is to inform public debate on the essential issues posed by slums in the developing world.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2013---Timothy Taylor

### Correction: The Composition and Drawdown of Wealth in Retirement

- Journal of Economic Perspectives---2013---James Poterba,Steven Venti,David Wise

### The Top 1 Percent in International and Historical Perspective

- Journal of Economic Perspectives---2013---Facundo Alvaredo,Anthony Atkinson,Thomas Piketty,Emmanuel Saez

The top 1 percent income share has more than doubled in the United States over the last 30 years, drawing much public attention in recent years. While other

English-speaking countries have also experienced sharp increases in the top 1 percent income share, many high-income countries such as Japan, France, or Germany have seen much less increase in top income shares. Hence, the explanation cannot rely solely on forces common to advanced countries, such as the impact of new technologies and globalization on the supply and demand for skills. Moreover, the explanations have to accommodate the falls in top income shares earlier in the twentieth century experienced in virtually all high-income countries. We highlight four main factors. The first is the impact of tax policy, which has varied over time and differs across countries. Top tax rates have moved in the opposite direction from top income shares. The effects of top rate cuts can operate in conjunction with other mechanisms. The second factor is a richer view of the labor market, where we contrast the standard supply-side model with one where pay is determined by bargaining and the reactions to top rate cuts may lead simply to a redistribution of surplus. Indeed, top rate cuts may lead managerial energies to be diverted to increasing their remuneration at the expense of enterprise growth and employment. The third factor is capital income. Overall, private wealth (relative to income) has followed a U-shaped path over time, particularly in Europe, where inherited wealth is, in Europe if not in the United States, making a return. The fourth, little investigated, element is the correlation between earned income and capital income, which has substantially increased in recent decades in the United States.

### Defending the One Percent

- Journal of Economic Perspectives---2013---N. Gregory Mankiw

Imagine a society with perfect economic equality. Then, one day, this egalitarian utopia is disturbed by an entrepreneur with an idea for a new product. Think of the entrepreneur as Steve Jobs as he develops the iPod, J. K. Rowling as she writes her Harry Potter books, or Steven Spielberg as he directs his blockbuster movies. The new product makes the entrepreneur much richer than everyone else. How should the entrepreneurial disturbance in this formerly egalitarian outcome alter public policy? Should public policy remain the same, because the situation was initially acceptable and the entrepreneur improved it for everyone? Or should government policymakers deplore the resulting inequality and use their powers to tax and transfer to spread the gains more equally? In my view, this thought experiment captures, in an extreme and stylized way, what has happened to US society over the past several decades. Since the 1970s, average incomes have grown, but the growth has not been uniform across the income distribution. The incomes at the top, especially in the top 1 percent, have grown much faster than average. These high earners have made significant economic contributions, but they have also reaped large gains. The question for public policy is what, if anything, to do about it.

### It's the Market: The Broad-Based Rise in the Return to Top Talent

- Journal of Economic Perspectives---2013---Steven N. Kaplan,Joshua Rauh

One explanation that has been proposed for rising inequality is that technical change allows highly talented individuals, or "superstars" to manage or perform on a larger scale, applying their talent to greater pools of resources and reaching larger numbers of people, thus becoming more productive and higher paid. Others argue that managerial power has increased in a way that allows those at the top to receive higher pay, that social norms against higher pay levels have broken down, or that tax policy affects the distribution of surpluses between employers and employees. We offer evidence bearing on the different theories explaining the rise in inequality in the United States over recent decades. First we look the increase in pay at the highest income levels across occupations. We consider the income share of the top 1 percent over time. And we turn to evidence on inequality of wealth at the top. In looking at the wealthiest Americans, we find that those in the Forbes 400 are less likely to have inherited their wealth or to have grown up wealthy. The Forbes 400 of today also are those who were able to access education while young and apply their skills to the most scalable industries: technology, finance, and mass retail. We believe that the US evidence on income and wealth shares for the top 1 percent is most consistent with a "superstar"-style explanation rooted in the importance of scale and skill-biased technological change. It is less consistent with an argument that the gains to the top 1 percent are rooted in greater managerial power or changes in social norms about what managers should earn.

### The Pay of Corporate Executives and Financial Professionals as Evidence of Rents in Top 1 Percent Incomes

- Journal of Economic Perspectives---2013---Josh Bivens,Lawrence Mishel

The debate over the extent and causes of rising inequality of American incomes and wages has now raged for at least two decades. In this paper, we will make four arguments. First, the increase in the incomes and wages of the top 1 percent over the last three decades should be interpreted as driven largely by the creation and/or redistribution of economic rents, and not simply as the outcome of well-functioning competitive markets rewarding skills or productivity based on marginal differences. This rise in rents accruing to the top 1 percent could be the result of increased opportunities for rentshifting, increased incentives for rent-shifting, or a combination of both. Second, this rise in incomes at the very top has been the primary impediment to having growth in living standards for low- and moderate-income households approach the growth rate of economy-wide productivity. Third, because this rise in top incomes is largely driven by rents, there is the potential for checking (or even reversing) this rise through policy measures with little to no adverse impact on overall economic growth. Lastly, this analysis suggests two complementary approaches for policymakers wishing to reverse the rise in the top 1 percent's share of income: dismantling the institutional sources of their increased ability to channel rents their way and/or reducing the return to this rent-seeking by significantly increasing marginal rates of taxation on high incomes.

### Income Inequality, Equality of Opportunity, and Intergenerational Mobility

- Journal of Economic Perspectives---2013---Miles Corak

My focus is on the degree to which increasing inequality in the high-income countries, particularly in the United States, is likely to limit economic mobility for the next generation of young adults. I discuss the underlying drivers of opportunity that generate the relationship between inequality and intergenerational mobility. The goal is to explain why America differs from other countries, how intergenerational mobility will change in an era of higher inequality, and how the process is different for the top 1 percent. I begin by presenting evidence that countries with more inequality at one point in time also experience less earnings mobility across the generations, a relationship that has been called "The Great Gatsby Curve." The interaction between families, labor markets, and public policies all structure a child's opportunities and determine the extent to which adult earnings are related to family background -- but they do so in different ways across national contexts. Both cross-country comparisons and the underlying trends suggest that these drivers are all configured most likely to lower, or at least not raise, the degree of intergenerational earnings mobility for the next generation of Americans coming of age in a more polarized labor market. This trend will likely continue unless there are changes in public policy that promote the human capital of children in a way that offers relatively greater benefits to the relatively disadvantaged.

### Why Hasn't Democracy Slowed Rising Inequality?

- Journal of Economic Perspectives---2013---Adam Bonica,Nolan McCarty,Keith T. Poole,Howard Rosenthal

During the past two generations, democratic forms have coexisted with massive increases in economic inequality in the United States and many other advanced democracies. Moreover, these new inequalities have primarily benefited the top 1 percent and even the top .01 percent. These groups seem sufficiently small that economic inequality could be held in check by political equality in the form of "one person, one vote." In this paper, we explore five possible reasons why the US political system has failed to counterbalance rising inequality. First, both Republicans and many Democrats have experienced an ideological shift toward acceptance of a form of free market capitalism that offers less support for government provision of transfers, lower marginal tax rates for those with high incomes, and deregulation of a number of industries. Second, immigration and low turnout of the poor have combined to make the distribution of voters more weighted to high incomes than is the distribution of households. Third, rising real income and wealth has made a larger fraction of the population less attracted to turning to government for social insurance. Fourth, the rich have been able to use their resources to influence electoral, legislative, and regulatory processes through campaign contributions, lobbying, and revolving door employment of politicians and bureaucrats. Fifth, the political process is distorted by institutions that reduce the accountability of elected officials to the majority and hampered by institutions that combine with political polarization to create policy gridlock.

### What Is European Integration Really About? A Political Guide for Economists

- Journal of Economic Perspectives---2013---Enrico Spolaore

Europe's monetary union is part of a broader process of integration that started in the aftermath of World War II. In this "political guide for economists," we look at the creation of the euro within the bigger picture of European integration. How and why were European institutions established? What is European integration really about? We address these questions from a political-economy perspective, building on ideas and results from the economic literature on the formation of states and political unions. Specifically, we look at the motivations, assumptions, and limitations of the European strategy initiated by Jean Monnet and his collaborators of partially integrating policy functions in a few areas with the expectation that more integration will follow in other areas in a sort of chain reaction toward an "ever-closer union." The euro with its current problems is a child of that strategy and its limits.

### Political Credit Cycles: The Case of the Eurozone

- Journal of Economic Perspectives---2013---Jesus Fernandez-Villaverde,Luis Garicano,Tano Santos

We study the mechanisms through which the entry into the euro delayed, rather than advanced, key economic reforms in the eurozone periphery and led to the deterioration of important institutions in these countries. We show that the abandonment of the reform process and the institutional deterioration, in turn, not only reduced their growth prospects but also fed back into financial conditions, prolonging the credit boom and delaying the response to the bubble when the speculative nature of the cycle was already evident. We analyze empirically the interrelation between the financial boom and the reform process in Greece, Spain, Ireland, and Portugal and, by way of contrast, in Germany, a country that did experience a reform process after the creation of the euro.

### Cross of Euros

- Journal of Economic Perspectives---2013---Kevin O'Rourke,Alan Taylor

The eurozone currently confronts severe short-run macroeconomic adjustment problems and a deficient institutional architecture that has to be reformed in the longer run. Europe's efforts at economic and monetary union are historically unprecedented. However, the gold standard provides lessons regarding what will and won't work, macroeconomically and politically, in the short run, while US history provides long-run lessons regarding appropriate institutional structures. The latter also suggests that institutional reform only happens at times of great crisis, and that it cannot be taken for granted. The eurozone's leaders may therefore ultimately have to take heed of the lessons of history regarding currency union breakups.

### Downward Nominal Wage Rigidity and the Case for Temporary Inflation in the Eurozone

- Journal of Economic Perspectives---2013---Stephanie Schmitt-Grohé,Martin Uribe

Since the onset of the Great Recession in peripheral Europe, nominal hourly wages have not fallen from the high levels they had reached during the boom years -- this in spite of widespread increases in unemployment. This observation evokes a well-known narrative in which nominal downward wage rigidity is at the center of the current unemployment problem. We embed downward nominal wage rigidity into a small open economy with tradable and nontradable goods and a fixed exchange-rate regime. In this model, negative external shocks cause involuntary unemployment. We analyze a number of national and supranational policy options for alleviating the unemployment problem caused by the combination of downward nominal wage rigidity and a fixed exchange-rate regime. We argue that, in spite of the existence of a battery of domestic policies that could be effective in solving the unemployment problem, it is unlikely that a solution will come from within national borders. This leaves supranational monetary stimulus as the most compelling avenue out of the crisis. Our model predicts that full employment in peripheral Europe could be restored by raising the euro area annual rate of inflation to about 4 percent for the next five years.

### Retrospectives: John Maynard Keynes, Investment Innovator

- Journal of Economic Perspectives---2013---David Chambers,Elroy Dimson

John Maynard Keynes made a major contribution to the development of professional investment management. Based on detailed archival research at King's College, Cambridge, we describe Keynes' investment philosophy, his investment performance, and the evolution of his investment approach as the manager of a large educational endowment. His portfolios were actively managed and unconventional. He was an investment innovator both in making a substantial allocation to the then new institutional asset class of common stocks as well as in championing value investing.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2013---Timothy Taylor

### The Growth of Finance

- Journal of Economic Perspectives---2013---Robin Greenwood,David Scharfstein

The US financial services industry grew from 4.9 percent of GDP in 1980 to 7.9 percent of GDP in 2007. A sizeable portion of the growth can be explained by rising asset management fees, which in turn were driven by increases in the valuation of tradable assets, particularly equity. Another important factor was growth in fees associated with an expansion in household credit, particularly fees associated with residential mortgages. This expansion was fueled by the development of nonbank credit intermediation (or "shadow banking"). We offer a preliminary assessment of whether the growth of active asset management, household credit, and shadow banking -- the main areas of growth in the financial sector -- has been socially beneficial.

### Finance: Function Matters, Not Size

- Journal of Economic Perspectives---2013---John Cochrane

It's fun to pass judgment on waste, size, usefulness, complexity, and excessive compensation. But as economists, we have an analytical structure for thinking about these questions. "I donâ€™t understand it" doesn't mean "it's bad," or "regulation will improve it." That attitude pervades policy analysis in general and financial regulation in particular, and economists do the world a disservice if we echo it. I will not offer a competing black box [to explain the size of the finance industry]. I donâ€™t claim to estimate the socially optimal "size of finance" at, say, 8.267 percent of GDP. It's just the wrong question. Hayek and the failure of planning should teach us a little modesty: Pronouncing on socially optimal industry size is a waste of time. Is the finance industry functioning well? Are there identifiable market or government distortions? Will proposed regulations help or make matters worse? These are useful questions.

### Moore's Law versus Murphy's Law: Algorithmic Trading and Its Discontents

- Journal of Economic Perspectives---2013---Andrei Kirilenko,Andrew Lo

Financial markets have undergone a remarkable transformation over the past two decades due to advances in technology. These advances include faster and cheaper computers, greater connectivity among market participants, and perhaps most important of all, more sophisticated trading algorithms. The benefits of such financial technology are evident: lower transactions costs, faster executions, and greater volume of trades. However, like any technology, trading technology has unintended consequences. In this paper, we review key innovations in trading technology starting with portfolio optimization in the 1950s and ending with high-frequency trading in the late 2000s, as well as opportunities, challenges, and economic incentives that accompanied these developments. We also discuss potential threats to financial stability created or facilitated by algorithmic trading and propose "Financial Regulation 2.0," a set of design principles for bringing the current financial regulatory framework into the Digital Age.

### An International Look at the Growth of Modern Finance

- Journal of Economic Perspectives---2013---Thomas Philippon,Ariell Reshef

We study the rise of finance across a set of now-industrial economies. The long-run pattern of the growth of the income share of finance from the nineteenth century to current times in the United States is similar to some economies, but not all economies reach the same size and instead reach a plateau. The relationship between financial output and income is nonhomothetic and changes three times in this sample. Most of the increase in real GDP per capita from 1870 occurred while financial output and the income share of finance were smaller than their size in 1980. After 1980 the elasticity of income with respect to financial output falls significantly. We find considerable heterogeneity in the size of finance in recent times. There is no evidence for an increase in the unit cost of financial intermediation. We find that information technology and financial deregulation can help explain the increase in relative skill intensity and in relative wages in finance, while common trends, which may be related to financial globalization, also play a role.

### Asset Management Fees and the Growth of Finance

- Journal of Economic Perspectives---2013---Burton G. Malkiel

From 1980 to 2006, the financial services sector of the US economy grew from 4.9 percent to 8.3 percent of GDP. A substantial share of that increase was comprised of increases in the fees paid for asset management. This paper examines the significant increase in asset management fees charged to both individual and institutional investors. One could argue that the increase in fees charged by actively managed funds could prove to be socially useful if it reflected increasing returns for investors from active management or if it was necessary to improve the efficiency of the market for investors who availed themselves of low-cost passive (index) funds. But neither of these arguments can be supported by the data. Actively managed funds of publicly traded securities have consistently underperformed index funds, and the amount of the underperformance is well approximated by the difference in the fees charged by the two types of funds. Moreover, it appears that there was no change in the efficiency of the market from 1980 to 2011. Thus, the increase in fees is likely to represent a deadweight loss for investors. Indeed, perhaps the greatest inefficiency in the stock market is in "the market" for investment advice.

### Investing in Preschool Programs

- Journal of Economic Perspectives---2013---Greg Duncan,Katherine Magnuson

We summarize the available evidence on the extent to which expenditures on early childhood education programs constitute worthy social investments in the human capital of children. We provide an overview of existing early childhood education programs, and then summarize results from a substantial body of methodologically sound evaluations of the impacts of early childhood education. The evidence supports few unqualified conclusions. Many early childhood education programs appear to boost cognitive ability and early school achievement in the short run. However, most of them show smaller impacts than those generated by the best-known programs, and their cognitive impacts largely disappear within a few years. Despite this fade-out, long-Ârun follow-ups from a handful of well-Ââ€ known programs show lasting positive effects on such outcomes as greater educational attainment, higher earnings, and lower rates of crime. It is uncertain what skills, behaviors, or developmental processes are particularly important in producing these longer-Ââ€ run impacts. Our review also describes different models of human development used by social scientists, examines heterogeneous results across groups, and tries to identify the ingredients of early childhood education programs that are most likely to improve the performance of these programs.

### What Can Be Done to Improve Struggling High Schools?

- Journal of Economic Perspectives---2013---Julie Cullen,Steven Levitt,Erin Robertson,Sally Sadoff

In spite of decades of well-intentioned efforts targeted at struggling high schools, outcomes today are little improved. A handful of innovative programs have achieved great success on a small scale, but more generally, the economic futures of the students at the bottom of the human capital distribution remain dismal. In our view, expanding access to educational options that focus on life skills and work experience, as opposed to a focus on traditional definitions of academic success, represents the most cost-effective, broadly implementable source of improvements for this group.

### Beyond BA Blinders: Lessons from Occupational Colleges and Certificate Programs for Nontraditional Students

- Journal of Economic Perspectives---2013---James E. Rosenbaum,Janet Rosenbaum

Postsecondary education mostly focuses on the four-year BA degree. Community colleges are often promoted as the first step toward the ultimate goal of a four-year degree. However, community colleges have extremely poor degree completion rates. There is evidence suggesting better results for their private, two-year counterparts -- particularly for certificate completion. We will focus on occupational colleges -- private accredited colleges that offer career preparation in occupational fields like health care, business, information technology, and others. These institutions challenge many of our preconceptions about college. They are less wedded to college traditions, which raises some interesting questions: Do private colleges offering certificates or AA degrees use different procedures? Should community colleges consider some of these procedures to reduce student difficulties and improve their completion rates? For many community college students, earning a more likely, quick sub-BA credential -- perhaps followed by a four-year degree in the future -- will be preferable to the relatively unlikely pathway from a community college program directly to a four-year BA. In sum, this paper suggests that nontraditional colleges and nontraditional credentials (certificates and AA degrees) deserve much closer attention from researchers, policymakers, and students.

### Economics versus Politics: Pitfalls of Policy Advice

- Journal of Economic Perspectives---2013---Daron Acemoglu,James Robinson

The standard approach to policy making and advice in economics implicitly or explicitly ignores politics and political economy and maintains that if possible, any market failure should be rapidly removed. This essay explains why this conclusion may be incorrect; because it ignores politics, this approach is oblivious to the impact of the removal of market failures on future political equilibria and economic efficiency, which can be deleterious. We first outline a simple framework for the study of the impact of current economic policies on future political equilibria -- and indirectly on future economic outcomes. We then illustrate the mechanisms through which such impacts might operate using a series of examples. The main message is that sound economic policy should be based on a careful analysis of political economy and should factor in its influence on future political equilibria.

### Latin America's Social Policy Challenge: Education, Social Insurance, Redistribution

- Journal of Economic Perspectives---2013---Santiago Levy,Norbert Schady

Long regarded as a region beset by macroeconomic instability, high inflation, and excessive poverty and inequality, Latin America has undergone a major transformation over the last 20 years. The region has seen improved macroeconomic management and substantial and sustained reductions in poverty and inequality. In this paper, we argue that social policy, including human capital and education, social insurance, and redistribution, need special attention if achievements of the last two decades are to be sustained and amplified. Starting in the mid 1990s, many governments in the region introduced a variety of programs, including noncontributory pensions and health insurance, and cash transfers targeted to the poor. Social spending in Latin America increased sharply. These policies have been widely praised, and we believe they have resulted in substantial improvements in the lives of the poor in the region. However, a more nuanced view shows some worrisome trends. Moving forward, we believe it is necessary to pay much closer attention to the quality of services, particularly in education; to the incentives generated by the interplay of some programs, particularly in the labor market; to a more balanced intertemporal distribution of benefits, particularly between young and old; and to sustainable sources of finance, particularly to the link between contributions and benefits.

### The Investment Strategies of Sovereign Wealth Funds

- Journal of Economic Perspectives---2013---Shai Bernstein,Josh Lerner,Antoinette Schoar

Sovereign wealth funds have emerged as major investors in corporate and real resources worldwide. After an overview of their magnitude, we consider the institutional arrangements under which many of the sovereign wealth funds operate. We focus on a specific set of agency problems that is of first-order importance for these funds: that is, the direct involvement of political leaders in the management process. We show that sovereign wealth funds with greater involvement of political leaders in fund management are associated with investment strategies that seem to favor short-term economic policy goals in their respective countries at the expense of longer-term maximization of returns. Sovereign wealth funds face several other issues, like how best to cope with demands for transparency, which can allow others to copy their investment strategies, and how to address the problems that arise with sheer size, like the difficulties of scaling up investment strategies that only work with a smaller value of assets under investment. In the conclusion, we discuss how various approaches cultivated by effective institutional investors worldwide -- from investing in the best people to pioneering new asset classes to compartmentalizing investment activities -- may provide clues as to how sovereign wealth funds might address these issues.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2013---Timothy Taylor

### The Case against Patents

- Journal of Economic Perspectives---2013---Michele Boldrin,David Levine

The case against patents can be summarized briefly: there is no empirical evidence that they serve to increase innovation and productivity, unless productivity is identified with the number of patents awarded—which, as evidence shows, has no correlation with measured productivity. Both theory and evidence suggest that while patents can have a partial equilibrium effect of improving incentives to invent, the general equilibrium effect on innovation can be negative. A properly designed patent system might serve to increase innovation at a certain time and place. Unfortunately, the political economy of government-operated patent systems indicates that such systems are susceptible to pressures that cause the ill effects of patents to grow over time. Our preferred policy solution is to abolish patents entirely and to find other legislative instruments, less open to lobbying and rent seeking, to foster innovation when there is clear evidence that laissez-faire undersupplies it. However, if that policy change seems too large to swallow, we discuss in the conclusion a set of partial reforms that could be implemented.

### Patents and Innovation: Evidence from Economic History

- Journal of Economic Perspectives---2013---Petra Moser

What is the optimal system of intellectual property rights to encourage innovation? Empirical evidence from economic history can help to inform important policy questions that have been difficult to answer with modern data: For example, does the existence of strong patent laws encourage innovation? What proportion of innovations is patented? Is this share constant across industries and over time? How does patenting affect the diffusion of knowledge? How effective are prominent mechanisms, such as patent pools and compulsory licensing, that have been proposed to address problems with the patent system? This essay summarizes results of existing research and highlights promising areas for future research.

### The New Patent Intermediaries: Platforms, Defensive Aggregators, and Super-Aggregators

- Journal of Economic Perspectives---2013---Andrei Hagiu,David B. Yoffie

The patent market consists mainly of privately negotiated, bilateral transactions, either sales or cross-licenses, between large companies. There is no eBay, Amazon, New York Stock Exchange, or Kelley's Blue Book equivalent for patents, and when buyers and sellers do manage to find each other, they usually negotiate under enormous uncertainty: prices of similar patents vary widely from transaction to transaction and the terms of the transactions (including prices) are often secret and confidential. Inefficient and illiquid markets, such as the one for patents, generally create profit opportunities for intermediaries. We begin with an overview of the problems that arise in patent markets, and how traditional institutions like patent brokers, patent pools, and standard-setting organizations have sought to address them. During the last decade, a variety of novel patent intermediaries has emerged. We discuss how several online platforms have started services for buying and selling patents but have failed to gain meaningful traction. And new intermediaries that we call defensive patent aggregators and superaggregators have become quite influential and controversial in the technology industries they touch. The goal of this paper is to shed light on the role and efficiency tradeoffs of these new patent intermediaries. Finally, we offer a provisional assessment of how the new patent intermediary institutions affect economic welfare.

### Of Smart Phone Wars and Software Patents

- Journal of Economic Perspectives---2013---Stuart Graham,Saurabh Vishnubhakat

Among the main criticisms currently confronting the US Patent and Trademark Office are concerns about software patents and what role they play in the web of litigation now proceeding in the smart phone industry. We will examine the evidence on the litigation and the treatment by the Patent Office of patents that include software elements. We present specific empirical evidence regarding the examination by the Patent Office of software patents, their validity, and their role in the smart phone wars. More broadly, this article discusses the competing values at work in the patent system and how the system has dealt with disputes that, like the smart phone wars, routinely erupt over time, in fact dating back to the very founding of the United States. The article concludes with an outlook for systematic policymaking within the patent system in the wake of major recent legislative and administrative reforms. Principally, the article highlights how the US Patent Office acts responsibly when it engages constructively with principled criticisms and calls for reform, as it has during the passage and now implementation of the landmark Leahy-Smith America Invents Act of 2011.

### Markets for Pollution Allowances: What Are the (New) Lessons?

- Journal of Economic Perspectives---2013---Lawrence H. Goulder

About 45 years ago a few economists offered the novel idea of trading pollution rights as a way of meeting environmental goals. Such trading was touted as a more cost-effective alternative to traditional forms of regulation, such as specific technology requirements or performance standards. The principal form of trading in pollution rights is a cap-and-trade system, whose essential elements are few and simple: first, the regulatory authority specifies the cap—the total pollution allowed by all of the facilities covered by the regulatory program; second, the regulatory authority distributes the allowances, either by auction or through free provision; third, the system provides for trading of allowances. Since the 1980s the use of cap and trade has grown substantially. In this overview article, I consider some key lessons about when cap-and-trade programs work well, when they perform less effectively, how they work compared with other policy options, and how they might need to be modified to address issues that had not been anticipated.

### The SO 2 Allowance Trading System: The Ironic History of a Grand Policy Experiment

- Journal of Economic Perspectives---2013---Richard Schmalensee,Robert Stavins

Two decades have passed since the Clean Air Act Amendments of 1990 launched a grand experiment in market-based environmental policy: the SO 2 cap-and-trade system. That system performed well but created four striking ironies: First, by creating this system to reduce SO 2 emissions to curb acid rain, the government did the right thing for the wrong reason. Second, a substantial source of this system's cost-effectiveness was an unanticipated consequence of earlier railroad deregulation. Third, it is ironic that cap-and-trade has come to be demonized by conservative politicians in recent years, as this market-based, cost-effective policy innovation was initially championed and implemented by Republican administrations. Fourth, court decisions and subsequent regulatory responses have led to the collapse of the SO 2 market, demonstrating that what the government gives, the government can take away.

### Carbon Markets 15 Years after Kyoto: Lessons Learned, New Challenges

- Journal of Economic Perspectives---2013---Richard Newell,William Pizer,Daniel Raimi

Carbon markets are substantial and they are expanding. There are many lessons from market experiences over the past eight years: there should be fewer free allowances, better management of market-sensitive information, and a recognition that trading systems require adjustments that have consequences for market participants and market confidence. Moreover, the emerging market architecture features separate emissions trading systems serving distinct jurisdictions and a variety of other types of policies exist alongside the carbon markets.This situation is in sharp contrast to the top-down, integrated global trading architecture envisioned 15 years ago by the designers of the Kyoto Protocol and raises a suite of new questions. In this new architecture, jurisdictions with emissions trading have to decide how, whether, and when to link with one another. Stakeholders and policymakers must confront how to measure the comparability of efforts among markets as well as relative to a variety of other policy approaches. International negotiators must in turn work out a global agreement that can accommodate and support increasingly bottom-up approaches to carbon markets and climate change mitigation.

### Moving Pollution Trading from Air to Water: Potential, Problems, and Prognosis

- Journal of Economic Perspectives---2013---Karen Fisher-Vanden,Sheila Olmstead

This paper seeks to assess the current status of water quality trading and to identify possible problems and solutions. Water pollution permit trading programs have rarely been comprehensively described and analyzed in the peer-reviewed literature. Including active programs and completed or otherwise inactive programs, we identify approximately three dozen initiatives. We describe six criteria for successful pollution trading programs and consider how these apply to standard water quality problems, as compared to air quality. We then highlight some important issues to be resolved if current water quality trading programs are to function as the "leading edge" of a new frontier in cost-effective pollution permit trading in the United States.

### Thirty Years of Prospect Theory in Economics: A Review and Assessment

- Journal of Economic Perspectives---2013---Nicholas C. Barberis

In 1979, Daniel Kahneman and Amos Tversky, published a paper in Econometrica titled "Prospect Theory: An Analysis of Decision under Risk." The paper presented a new model of risk attitudes called "prospect theory," which elegantly captured the experimental evidence on risk taking, including the documented violations of expected utility. More than 30 years later, prospect theory is still widely viewed as the best available description of how people evaluate risk in experimental settings. However, there are still relatively few well-known and broadly accepted applications of prospect theory in economics. One might be tempted to conclude that, even if prospect theory is an excellent description of behavior in experimental settings, it is less relevant outside the laboratory. In my view, this lesson would be incorrect. Over the past decade, researchers in the field of behavioral economics have put a lot of thought into how prospect theory should be applied in economic settings. This effort is bearing fruit. A significant body of theoretical work now incorporates the ideas in prospect theory into more traditional models of economic behavior, and a growing body of empirical work tests the predictions of these new theories. I am optimistic that some insights of prospect theory will eventually find a permanent and significant place in mainstream economic analysis.

### The RAND Health Insurance Experiment, Three Decades Later

- Journal of Economic Perspectives---2013---Aviva Aron-Dine,Liran Einav,Amy Finkelstein

Between 1974 and 1981, the RAND health insurance experiment provided health insurance to more than 5,800 individuals from about 2,000 households in six different locations across the United States, a sample designed to be representative of families with adults under the age of 62. More than three decades later, the RAND results are still widely held to be the "gold standard" of evidence for predicting the likely impact of health insurance reforms on medical spending, as well as for designing actual insurance policies. On cost grounds alone, we are unlikely to see something like the RAND experiment again. In this essay, we reexamine the core findings of the RAND health insurance experiment in light of the subsequent three decades of work on the analysis of randomized experiments and the economics of moral hazard. First, we re-present the main findings of the RAND experiment in a manner more similar to the way they would be presented today. Second, we reexamine the validity of the experimental treatment effects. Finally, we reconsider the famous RAND estimate that the elasticity of medical spending with respect to its out-of pocket price is -0.2. We draw a contrast between how this elasticity was originally estimated and how it has been subsequently applied, and more generally we caution against trying to summarize the experimental treatment effects from nonlinear health insurance contracts using a single price elasticity.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2013---Timothy Taylor

### From Exxon to BP: Has Some Number Become Better Than No Number?

- Journal of Economic Perspectives---2012---Catherine Kling,Daniel Phaneuf,Jinhua Zhao

On March 23, 1989, the Exxon Valdez ran aground in Alaska's Prince William Sound and released over 250,000 barrels of crude oil, resulting in 1300 miles of oiled shoreline. The Exxon spill ignited a debate about the appropriate compensation for damages suffered, and among economists, a debate concerning the adequacy of methods to value public goods, particularly when the good in question has limited direct use, such as the pristine natural environment of the spill region. The efficacy of stated preference methods generally, and contingent valuation in particular, is no mere academic debate. Billions of dollars are at stake. An influential symposium appearing in this journal in 1994 provided arguments for and against the credibility of these methods, and an extensive research program published in academic journals has continued to this day. This paper assesses what occurred in this academic literature between the Exxon spill and the BP disaster. We will rely on theoretical developments, neoclassical and behavioral paradigms, empirical and experimental evidence, and a clearer elucidation of validity criteria to provide a framework for readers to ponder the question of the validity of contingent valuation and, more generally, stated preference methods.

### Contingent Valuation: A Practical Alternative When Prices Aren't Available

- Journal of Economic Perspectives---2012---Richard Carson

A person may be willing to make an economic tradeoff to assure that a wilderness area or scenic resource is protected even if neither that person nor (perhaps) anyone else will actually visit this area. This tradeoff is commonly labeled "passive use value." Contingent valuation studies ask questions that help to reveal the monetary tradeoff each person would make concerning the value of goods or services. Such surveys are a practical alternative approach for eliciting the value of public goods, including those with passive use considerations. First I discuss the Exxon Valdez oil spill of March 1989, focusing on why it is important to measure monetary tradeoffs for goods where passive use considerations loom large. Although discussions of contingent valuation often focus on whether the method is sufficiently reliable for use in assessing natural resource damages in lawsuits, it is important to remember that most estimates from contingent valuation studies are used in benefitâ€ "cost assessments, not natural resource damage assessments. Those working on benefitâ€ "cost analysis have long recognized that goods and impacts that cannot be quantified are valued, implicitly, by giving them a limitless value when government regulations preclude certain activities, or giving them a value of zero by leaving certain consequences out of the analysis. Contingent valuation offers a practical alternative for reducing the use of either of these extreme choices. I put forward an affirmative case for contingent valuation and address a number of the concerns that have arisen.

### Contingent Valuation: From Dubious to Hopeless

- Journal of Economic Perspectives---2012---Jerry Hausman

Approximately 20 years ago, Peter Diamond and I wrote an article for this journal analyzing contingent valuation methods. At that time Peter's view was that contingent valuation was hopeless, while I was dubious but somewhat more optimistic. But 20 years later, after millions of dollars of largely government-funded research, I have concluded that Peter's earlier position was correct and that contingent valuation is hopeless. In this paper, I selectively review the contingent valuation literature, focusing on empirical results. I find that three long-standing problems continue to exist: 1) hypothetical response bias that leads contingent valuation to overstatements of value; 2) large differences between willingness to pay and willingness to accept; and 3) the embedding problem which encompasses scope problems. The problems of embedding and scope are likely to be the most intractable. Indeed, I believe that respondents to contingent valuation surveys are often not responding out of stable or well-defined preferences, but are essentially inventing their answers on the fly, in a way which makes the resulting data useless for serious analysis. Finally, I offer a case study of a prominent contingent valuation study done by recognized experts in this approach, a study that should be only minimally affected by these concerns but in which the answers of respondents to the survey are implausible and inconsistent.

### The End of Cheap Chinese Labor

- Journal of Economic Perspectives---2012---Hongbin Li,Lei Li,Binzhen Wu,Yanyan Xiong

In recent decades, cheap labor has played a central role in the Chinese model, which has relied on expanded participation in world trade as a main driver of growth. At the beginning of China's economic reforms in 1978, the annual wage of a Chinese urban worker was only $1,004 in U.S. dollars. The Chinese wage was only 3 percent of the average U.S. wage at that time, and it was also significantly lower than the wages in neighboring Asian countries such as the Philippines and Thailand. The Chinese wage was also low relative to productivity. However, wages are now rising in China. In 2010, the annual wage of a Chinese urban worker reached $5,487 in U.S. dollars, which is similar to wages earned by workers in the Philippines and Thailand and significantly higher than those earned by workers in India and Indonesia. China's wages also increased faster than productivity since the late 1990s, suggesting that Chinese labor is becoming more expensive in this sense as well. The increase in China's wages is not confined to any sector, as wages have increased for both skilled and unskilled workers, for both coastal and inland areas, and for both exporting and nonexporting firms. We benchmark wage growth to productivity growth using both national- and industry-level data, showing that Chinese labor was kept cheap until the late 1990s but the relative cost of labor has increased since then. Finally, we discuss the main forces that are pushing wages up.

### Labor Market Outcomes and Reforms in China

- Journal of Economic Perspectives---2012---Xin Meng

Over the past few decades of economic reform, China's labor markets have been transformed to an increasingly market-driven system. China has two segregated economies: the rural and urban. Understanding the shifting nature of this divide is probably the key to understanding the most important labor market reform issues of the last decades and the decades ahead. From 1949, the Chinese economy allowed virtually no labor mobility between the rural and urban sectors. Rural-urban segregation was enforced by a household registration system called "hukou." Individuals born in rural areas receive "agriculture hukou" while those born in cities are designated as "nonagricultural hukou." In the countryside, employment and income were linked to the commune-based production system. Collectively owned communes provided very basic coverage for health, education, and pensions. In cities, state-assigned life-time employment, centrally determined wages, and a cradle-to-grave social welfare system were implemented. In the late 1970s, China's economic reforms began, but the timing and pattern of the changes were quite different across rural and urban labor markets. This paper focuses on employment and wages in the urban labor markets, the interaction between the urban and rural labor markets through migration, and future labor market challenges. Despite the remarkable changes that have occurred, inherited institutional impediments still play an important role in the allocation of labor; the hukou system remains in place, and 72 percent of China's population is still identified as rural hukou holders. China must continue to ease its restrictions on ruralâ€ "urban migration, and must adopt policies to close the widening rural-urban gap in education, or it risks suffering both a shortage of workers in the growing urban areas and a deepening urban-rural economic divide.

### Understanding China's Growth: Past, Present, and Future

- Journal of Economic Perspectives---2012---Xiaodong Zhu

The pace and scale of China's economic transformation have no historical precedent. In 1978, China was one of the poorest countries in the world. The real per capita GDP in China was only one-fortieth of the U.S. level and one-tenth the Brazilian level. Since then, China's real per capita GDP has grown at an average rate exceeding 8 percent per year. As a result, China's real per capita GDP is now almost one-fifth the U.S. level and at the same level as Brazil. This rapid and sustained improvement in average living standard has occurred in a country with more than 20 percent of the worldâ€™s population so that China is now the second-largest economy in the world. I will begin by discussing briefly China's historical growth performance from 1800 to 1950. I then present growth accounting results for the period from 1952 to 1978 and the period since 1978, decomposing the sources of growth into capital deepening, labor deepening, and productivity growth. But the main focus of this paper will be to examine the sources of growth since 1978, the year when China started economic reform. Perhaps surprisingly, given China's well-documented sky-high rates of saving and investment, I will argue that Chinaâ€™s rapid growth over the last three decades has been driven by productivity growth rather than by capital investment. I also examine the contributions of sector-level productivity growth, and of resource reallocation across sectors and across firms within a sector, to aggregate productivity growth. Overall, gradual and persistent institutional change and policy reforms that have reduced distortions and improved economic incentives are the main reasons for the productivity growth.

### Aggregate Savings and External Imbalances in China

- Journal of Economic Perspectives---2012---Dennis Yang

Over the last decade, the internal and external macroeconomic imbalances in China have risen to unprecedented levels. In 2008, China's national savings rate soared to over 53 percent of its GDP, whereas its current account surplus exceeded 9 percent of GDP. This paper presents a unified framework for understanding the structural causes of these imbalances. I argue that the imbalances are attributable to a set of policies and institutions embedded in the economy. I propose a unified framework for understanding the joint causes of the high savings rate and external imbalances in China. My explanations first focus on an array of factors that encouraged saving across the corporate, government, and household sectors, such as policies that affected sectoral income distribution, along with factors like incomplete social welfare reforms, and population control policies. I then turn to policies that limited investment in China, thus preventing the high savings from being used domestically. Finally, I will examine how trade policies, such as export tax rebates, special economic zones, and exchange rate policies, strongly promote exports. Moreover, the accession of China to the World Trade Organization has dramatically amplified the effects of these structural distortions. In conclusion, I recommend some policy reforms for rebalancing the Chinese economy.

### How Did China Take Off?

- Journal of Economic Perspectives---2012---Yasheng Huang

There are two prevailing perspectives on how China took off. One emphasizes the role of globalizationâ€" foreign trade and investments and special economic zones; the other emphasizes the role of internal reforms, especially rural reforms. Detailed documentary and quantitative evidence provides strong support for the second hypothesis. To understand how China's economy took off requires an accurate and detailed understanding of its rural development, especially rural industry spearheaded by the rise of township and village enterprises. Many China scholars believe that township and village enterprises have a distinct ownership structureâ€" that they are owned and operated by local governments rather than by private entrepreneurs. I will show that township and village enterprises from the inception have been private and that China undertook significant and meaningful financial liberalization at the very start of reforms. Rural private entrepreneurship and financial reforms correlate strongly with some of China's best-known achievementsâ€" poverty reduction, fast GDP growth driven by personal consumption (rather than by corporate investments and government spending), and an initial decline of income inequality. The conventional view of China scholars is right about one pointâ€" that today's Chinese financial sector is completely state-controlled. This is because China reversed almost all of its financial liberalization sometime around the early to mid 1990s. This financial reversal, despite its monumental effect on the welfare of hundreds of millions of rural Chinese, is almost completely unknown in the West.

### Amy Finkelstein: 2012 John Bates Clark Medalist

- Journal of Economic Perspectives---2012---Jonathan Levin,James Poterba

Amy Finkelstein is the 2012 recipient of the John Bates Clark Medal from the American Economic Association. The core concerns of Amy's research program have been insurance markets and health care. She has addressed whether asymmetric information leads to inefficiencies in insurance markets, how large social insurance programs affect healthcare markets, and the determinants of innovation incentives in health care. We describe a number of Amy's key research contributions, with particular emphasis on those identified by the Honors and Awards Committee of the American Economic Association in her Clark Medal citation, as well as her broader contributions to the field of economics.

### Retrospectives: Irving Fisher's Appreciation and Interest (1896) and the Fisher Relation

- Journal of Economic Perspectives---2012---Robert Dimand,Rebeca Gomez Betancourt

Irving Fisher's monograph Appreciation and Interest (1896) proposed his famous equation showing expected inflation as the difference between nominal interest and real interest rates. In addition, he drew attention to insightful remarks and numerical examples scattered through the earlier literature, and he derived results ranging from the uncovered interest arbitrage parity condition between currencies to the expectations theory of the term structure of interest rates. As J. Bradford DeLong wrote in this journal (Winter 2000), "The story of 20th century macroeconomics begins with Irving Fisher" and specifically with Appreciation and Interest because "the transformation of the quantity theory of money into a tool for making quantitative analyses and predictions of the price level, inflation, and interest rates was the creation of Irving Fisher." I discuss the message of Appreciation and Interest, and assess how original he was.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2012---Timothy Taylor

### A Search and Matching Approach to Labor Markets: Did the Natural Rate of Unemployment Rise?

- Journal of Economic Perspectives---2012---Mary Daly,Bart Hobijn,Aysegül Sahin,Robert Valletta

The U.S. unemployment rate has remained stubbornly high since the 2007-2009 recession, leading some observers to conclude that structural rather than cyclical factors are to blame. Relying on a standard job search and matching framework and empirical evidence from a wide array of labor market indicators, we examine whether the natural rate of unemployment has increased since the recession began, and if so, whether the underlying causes are transitory or persistent. Our preferred estimate indicates an increase in the natural rate of unemployment of about one percentage point during the recession and its immediate aftermath, putting the current natural rate at around 6 percent. An assessment of the underlying factors responsible for this increase, including labor market mismatch, extended unemployment benefits, and uncertainty about overall economic conditions, implies that only a small fraction is likely to be persistent.

### Who Suffers during Recessions?

- Journal of Economic Perspectives---2012---Hilary Hoynes,Douglas Miller,Jessamyn Schaller

In this paper, we examine how business cycles affect labor market outcomes in the United States. We conduct a detailed analysis of how cycles affect outcomes differentially across persons of differing age, education, race, and gender, and we compare the cyclical sensitivity during the Great Recession to that in the early 1980s recession. We present raw tabulations and estimate a state panel data model that leverages variation across U.S. states in the timing and severity of business cycles. We find that the impacts of the Great Recession are not uniform across demographic groups and have been felt most strongly for men, black and Hispanic workers, youth, and low-education workers. These dramatic differences in the cyclicality across demographic groups are remarkably stable across three decades of time and throughout recessionary periods and expansionary periods. For the 2007 recession, these differences are largely explained by differences in exposure to cycles across industry-occupation employment.

### The European Sovereign Debt Crisis

- Journal of Economic Perspectives---2012---Philip Lane

The origin and propagation of the European sovereign debt crisis can be attributed to the flawed original design of the euro. In particular, there was an incomplete understanding of the fragility of a monetary union under crisis conditions, especially in the absence of banking union and other European-level buffer mechanisms. Moreover, the inherent messiness involved in proposing and implementing incremental multicountry crisis management responses on the fly has been an important destabilizing factor throughout the crisis. After diagnosing the situation, we consider reforms that might improve the resilience of the euro area to future fiscal shocks.

### Public Debt Overhangs: Advanced-Economy Episodes since 1800

- Journal of Economic Perspectives---2012---Carmen Reinhart,Vincent Reinhart,Kenneth Rogoff

We identify the major public debt overhang episodes in the advanced economies since the early 1800s, characterized by public debt to GDP levels exceeding 90 percent for at least five years. Consistent with Reinhart and Rogoff (2010) and most of the more recent research, we find that public debt overhang episodes are associated with lower growth than during other periods. The duration of the average debt overhang episode is perhaps its most striking feature. Among the 26 episodes we identify, 20 lasted more than a decade. The long duration belies the view that the correlation is caused mainly by debt buildups during business cycle recessions. The long duration also implies that the cumulative shortfall in output from debt overhang is potentially massive. These growth-reducing effects of high public debt are apparently not transmitted exclusively through high real interest rates, as in eleven of the episodes, interest rates are not materially higher.

### The Economics of Spam

- Journal of Economic Perspectives---2012---Justin M. Rao,David Reiley

We estimate that American firms and consumers experience costs of almost $20 billion annually due to spam. Our figure is more conservative than the $50 billion figure often cited by other authors, and we also note that the figure would be much higher if it were not for private investment in anti-spam technology by firms, which we detail further on. Based on the work of crafty computer scientists who have infiltrated and monitored spammers' activity, we estimate that spammers and spam-advertised merchants collect gross worldwide revenues on the order of $200 million per year. Thus, the "externality ratio" of external costs to internal benefits for spam is around 100:1. In this paper, we start by describing the history of the market for spam, highlighting the strategic cat-and-mouse game between spammers and email providers. We discuss how the market structure for spamming has evolved from a diffuse network of independent spammers running their own online stores to a highly specialized industry featuring a well-organized network of merchants, spam distributors (botnets), and spammers (or "advertisers"). We then put the spam market's externality ratio of 100 into context by comparing it to other activities with negative externalities. Lastly, we evaluate various policy proposals designed to solve the spam problem, cautioning that these proposals may err in assuming away the spammers' ability to adapt.

### Identifying the Disadvantaged: Official Poverty, Consumption Poverty, and the New Supplemental Poverty Measure

- Journal of Economic Perspectives---2012---Bruce Meyer,James Sullivan

We discuss poverty measurement, focusing on two alternatives to the current official measure: consumption poverty, and the Census Bureau's new Supplemental Poverty Measure (SPM) that was released for the first time last year. The SPM has advantages over the official poverty measure, including a more defensible adjustment for family size and composition, an expanded definition of the family unit that includes cohabitors, and a definition of income that is conceptually closer to resources available for consumption. The SPM's definition of income, though conceptually broader than pre-tax money income, is difficult to implement given available data and their accuracy. Furthermore, income data do not capture consumption out of savings and tangible assets such as houses and cars. A consumption-based measure has similar advantages but fewer disadvantages. We compare those added to and dropped from the poverty rolls by the alternative measures relative to the current official measure. We find that the SPM adds to poverty individuals who are more likely to be college graduates, own a home and a car, live in a larger housing unit, have air conditioning, health insurance, and substantial assets, and have other more favorable characteristics than those who are dropped from poverty. Meanwhile, we find that a consumption measure compared to the official measure or the SPM adds to the poverty rolls individuals who are more disadvantaged than those who are dropped. We decompose the differences between the SPM and official poverty and find that the most problematic aspect of the SPM is the subtraction of medical out-of-pocket expenses from SPM income. Also, because the SPM poverty thresholds change in an odd way over time, it will be hard to determine if changes in poverty are due to changes in income or changes in thresholds. Our results present strong evidence that a consumption-based poverty measure is preferable to both the official income-based poverty measure and to the Supplemental Poverty Measure for determining who are the most disadvantaged.

### The New Demographic Transition: Most Gains in Life Expectancy Now Realized Late in Life

- Journal of Economic Perspectives---2012---Karen Eggleston,Victor Fuchs

The share of increases in life expectancy realized after age 65 was only about 20 percent at the beginning of the 20th century for the United States and 16 other countries at comparable stages of development; but that share was close to 80 percent by the dawn of the 21st century, and is almost certainly approaching 100 percent asymptotically. This new demographic transition portends a diminished survival effect on working life. For high-income countries at the forefront of the longevity transition, expected lifetime labor force participation as a percent of life expectancy is declining. Innovative policies are needed if societies wish to preserve a positive relationship running from increasing longevity to greater prosperity.

### Groups Make Better Self-Interested Decisions

- Journal of Economic Perspectives---2012---Gary Charness,Matthias Sutter

In this paper, we describe what economists have learned about differences between group and individual decision-making. This literature is still young, and in this paper, we will mostly draw on experimental work (mainly in the laboratory) that has compared individual decision-making to group decision-making, and to individual decision-making in situations with salient group membership. The bottom line emerging from economic research on group decision-making is that groups are more likely to make choices that follow standard game-theoretic predictions, while individuals are more likely to be influenced by biases, cognitive limitations, and social considerations. In this sense, groups are generally less "behavioral" than individuals. An immediate implication of this result is that individual decisions in isolation cannot necessarily be assumed to be good predictors of the decisions made by groups. More broadly, the evidence casts doubts on traditional approaches that model economic behavior as if individuals were making decisions in isolation.

### Deleveraging and Monetary Policy: Japan since the 1990s and the United States since 2007

- Journal of Economic Perspectives---2012---Kazuo Ueda

As the U.S. economy works through a sluggish recovery several years after the Great Recession technically came to an end in June 2009, it can only look with horror toward Japan's experience of two decades of stagnant growth since the early 1990s. In contrast to Japan, U.S. policy authorities responded to the financial crisis since 2007 more quickly. Surely, they learned from Japan's experience. I will begin by describing how Japan's economic situation unfolded in the early 1990s and offering some comparisons with how the Great Recession unfolded in the U.S. economy. I then turn to the Bank of Japan's policy responses to the crisis and again offer some comparisons to the Federal Reserve. I will discuss the use of both the conventional interest rate tool—the federal funds rate in the United States, and the "call rate" in Japan—and nonconventional measures of monetary policy and consider their effectiveness in the context of the rest of the financial system.

### The Relationship between Unit Cost and Cumulative Quantity and the Evidence for Organizational Learning-by-Doing

- Journal of Economic Perspectives---2012---Peter Thompson

The concept of a learning curve for individuals has been around since the beginning of the twentieth century. The idea that an analogous phenomenon might also apply at the level of the organization took longer to emerge, but it had begun to figure prominently in military procurement and scheduling at least a decade before Wright's (1936) classic paper providing evidence that the cost of producing an airframe declined as cumulative output increased. Wright (1936) was careful not to describe his empirical results as a learning curve. Of his three proposed explanations for the relationships he observed between cost and cumulative quantity produced, only one is unambiguously a source of organizational learning; the others are consistent with organizational learning but also with standard static economies of scale. It quickly became apparent that the notion of organizational learning as a by-product of accumulated experience has important consequences for firm strategy. The Boston Consulting Group (BCG) built its consulting business around the concept of what it branded the experience curve, asserting that cost reductions associated with cumulative output applied to all costs, were "consistently around 20-30% each time accumulated production is doubled, [and] this decline goes on in time without limit" (Henderson 1968). Today, the negative relationship between unit production costs and cumulative output is one of the best-documented empirical regularities in economics. Nonetheless, the thesis of this paper is that the conceptual transformation of the relationship between cost and cumulative production into an organizational learning curve with profound strategic implications has not been sufficiently supported with direct empirical evidence.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2012---Timothy Taylor

### The Journal of Economic Perspectives at 100 (Issues)

- Journal of Economic Perspectives---2012---David Autor

When I was a graduate student, I discovered that the Journal of Economic Perspectives embodied much of what I love about the field of economics: the clarity that pierces rhetoric to seek the core of a question; the rigor to identify the causal relationships, tradeoffs, and indeterminancies inherent in a problem; the self-assurance to apply the disciplinary toolkit to problems both sacred and profane; and the force of logic to reach conclusions that might be unexpected, controversial, or refreshingly bland. It never occurred to me in those years that one day I would edit the journal. While doing so is a privilege and a pleasure, I equally confess that it's no small weight to be the custodial parent of one of our profession's most beloved offspring. No less intimidating is the task of stipulating what this upstart youth has accomplished in its first 25 years and 100 issues in print. Like any empiricist, I recognize that the counterfactual world that would exist without the JEP is unknowable, but my strong hunch is that our profession would be worse off in that counterfactual world. In this essay, I reflect on the journal's accomplishments and articulate some of my own goals for the JEP going forward.

### The Journal of Economic Perspectives and the Marketplace of Ideas: A View from the Founding

- Journal of Economic Perspectives---2012---Joseph Stiglitz

I welcome the opportunity to join in the celebration of the twenty-fifth birthday of the Journal of Economic Perspectives . It is wonderful to see how this "baby," which I, along with Carl Shapiro and Timothy Taylor, nurtured through its formative years—from 1984 (three years before the first issue in 1987) until I left in 1993—has grown up and become an established part of the economics profession. In founding the journal, we had many objectives, hopes, and ambitions. We were concerned about the increasing specialization within the economics profession. We sought to have complex and sometimes arcane or highly mathematical ideas translated into plain English, or at least that dialect of the language known as "Economese"—and in a way that was not only informative but engaging. We were worried too about a growing distance between economics and policy. At least a portion of economic research should be related to ideas that were, or should or would be, part of the national and global policy debates. We began with an explicit commitment to present a diversity of viewpoints, hence the word "perspectives" in the title. One of the goals we set out for ourselves was to disseminate developments within economics more rapidly. We never shied away from controversy at the journal, but we tried to ensure that the discussion was balanced.

### From the Desk of the Managing Editor

- Journal of Economic Perspectives---2012---Timothy Taylor

Editing isn't "teaching" and it isn't "research," so in the holy trinity of academic responsibilities it is apparently bunched with faculty committees, student advising, and talks to the local Kiwanis club as part of "service." Yet for many economists, editing seems to loom larger in their professional lives. After all, EconLit indexes more than 750 academic journals of economics, which require an ever-shifting group of editors, co-editors, and advisory boards to function. Roughly one-third of the books in the annotated listings at the back of each issue of the Journal of Economic Literature are edited volumes. Here is one take on the enterprise of editing from someone who has been sitting in the Managing Editor's chair for all 100 issues of the Journal of Economic Perspectives since before the first issue of the journal mailed in Summer 1987.

### The Rise of Middle Kingdoms: Emerging Economies in Global Trade

- Journal of Economic Perspectives---2012---Gordon Hanson

In this paper, I examine changes in international trade associated with the integration of low- and middle-income countries into the global economy. Led by China and India, the share of developing economies in global exports more than doubled between 1994 and 2008. One feature of new trade patterns is greater South-South trade. China and India have booming demand for imported raw materials, which they use to build cities and factories. Industrialization throughout the South has deepened global production networks, contributing to greater trade in intermediate inputs. A second feature of new trade patterns is the return of comparative advantage as a driver of global commerce. Growth in low- and middle-income nations makes specialization according to comparative advantage more important for the global composition of trade, as North-South and South-South commerce overtakes North-North flows. China's export specialization evolves rapidly over time, revealing a capacity to speed up product ladders. Most developing countries hyper-specialize in a handful of export products. The emergence of low- and middle-income countries in trade reveals significant gaps in knowledge about the deep empirical determinants of export specialization, the dynamics of specialization patterns, and why South-South and North-North trade differ.

### Putting Ricardo to Work

- Journal of Economic Perspectives---2012---Jonathan Eaton,Samuel Kortum

David Ricardo (1817) provided a mathematical example showing that countries could gain from trade by exploiting innate differences in their ability to make different goods. In the basic Ricardian example, two countries do better by specializing in different goods and exchanging them for each other, even when one country is better at making both. This example typically gets presented in the first or second chapter of a text on international trade, and sometimes appears even in a principles text. But having served its pedagogical purpose, the model is rarely heard from again. The Ricardian model became something like a family heirloom, brought down from the attic to show a new generation of students, and then put back. Nearly two centuries later, however, the Ricardian framework has experienced a revival. Much work in international trade during the last decade has returned to the assumption that countries gain from trade because they have access to different technologies. These technologies may be generally available to producers in a country, as in the Ricardian model of trade, our topic here, or exclusive to individual firms. This line of thought has brought Ricardo's theory of comparative advantage back to center stage. Our goal is to make this new old trade theory accessible and to put it to work on some current issues in the international economy.

### Gains from Trade When Firms Matter

- Journal of Economic Perspectives---2012---Marc Melitz,Daniel Trefler

The rising prominence of intra-industry trade and huge multinationals has transformed the way economists think about the gains from trade. In the past, we focused on gains that stemmed either from endowment differences (wheat for iron ore) or inter-industry comparative advantage (David Ricardo's classic example of cloth for port). Today, we focus on three sources of gains from trade: 1) love-of-variety gains associated with intra-industry trade; 2) allocative efficiency gains associated with shifting labor and capital out of small, less-productive firms and into large, more-productive firms; and 3) productive efficiency gains associated with trade-induced innovation. This paper reviews these three sources of gains from trade both theoretically and empirically. Our empirical evidence will be centered on the experience of Canada following its closer economic integration in 1989 with the United States—the largest example of bilateral intra-industry trade in the world—but we will also describe evidence for other countries.

### Globalization and U.S. Wages: Modifying Classic Theory to Explain Recent Facts

- Journal of Economic Perspectives---2012---Jonathan Haskel,Robert Lawrence,Edward Leamer,Matthew J. Slaughter

This paper seeks to review how globalization might explain the recent trends in real and relative wages in the United States. We begin with an overview of what is new during the last 10-15 years in globalization, productivity, and patterns of U.S. earnings. To preview our results, we then work through four main findings: First, there is only mixed evidence that trade in goods, intermediates, and services has been raising inequality between more- and less-skilled workers. Second, it is more possible, although far from proven, that globalization has been boosting the real and relative earnings of superstars. The usual trade-in-goods mechanisms probably have not done this. But other globalization channels—such as the combination of greater tradability of services and larger market sizes abroad—may be playing an important role. Third, seeing this possible role requires expanding standard Heckscher-Ohlin trade models, partly by adding insights of more recent research with heterogeneous firms and workers. Finally, our expanded trade framework offers new insights on the sobering fact of pervasive real-income declines for the large majority of Americans in the past decade.

### Why Is the Teen Birth Rate in the United States So High and Why Does It Matter?

- Journal of Economic Perspectives---2012---Melissa Kearney,Phillip Levine

Why is the rate of teen childbearing is so unusually high in the United States as a whole, and in some U.S. states in particular? U.S. teens are two and a half times as likely to give birth as compared to teens in Canada, around four times as likely as teens in Germany or Norway, and almost ten times as likely as teens in Switzerland. A teenage girl in Mississippi is four times more likely to give birth than a teenage girl in New Hampshire—and 15 times more likely to give birth as a teen compared to a teenage girl in Switzerland. We examine teen birth rates alongside pregnancy, abortion, and "shotgun" marriage rates as well as the antecedent behaviors of sexual activity and contraceptive use. We demonstrate that variation in income inequality across U.S. states and developed countries can explain a sizable share of the geographic variation in teen childbearing. Our reading of the totality of evidence leads us to conclude that being on a low economic trajectory in life leads many teenage girls to have children while they are young and unmarried. Teen childbearing is explained by the low economic trajectory but is not an additional cause of later difficulties in life. Surprisingly, teen birth itself does not appear to have much direct economic consequence. Our view is that teen childbearing is so high in the United States because of underlying social and economic problems. It reflects a decision among a set of girls to "drop-out" of the economic mainstream; they choose nonmarital motherhood at a young age instead of investing in their own economic progress because they feel they have little chance of advancement.

### Why Was the Arab World Poised for Revolution? Schooling, Economic Opportunities, and the Arab Spring

- Journal of Economic Perspectives---2012---Filipe Campante,Davin Chor

What underlying long-term conditions set the stage for the Arab Spring? In recent decades, the Arab region has been characterized by an expansion in schooling coupled with weak labor market conditions. This pattern is especially pronounced in those countries that saw significant upheaval during the first year of the Arab Spring uprisings. We argue that the lack of adequate economic opportunities for an increasingly educated populace can help us understand episodes of regime instability such as the Arab Spring.

### Using Internet Data for Economic Research

- Journal of Economic Perspectives---2012---Benjamin Edelman

The data used by economists can be broadly divided into two categories. First, structured datasets arise when a government agency, trade association, or company can justify the expense of assembling records. The Internet has transformed how economists interact with these datasets by lowering the cost of storing, updating, distributing, finding, and retrieving this information. Second, some economic researchers affirmatively collect data of interest. For researcher-collected data, the Internet opens exceptional possibilities both by increasing the amount of information available for researchers to gather and by lowering researchers' costs of collecting information. In this paper, I explore the Internet's new datasets, present methods for harnessing their wealth, and survey a sampling of the research questions these data help to answer. The first section of this paper discusses "scraping" the Internet for data—that is, collecting data on prices, quantities, and key characteristics that are already available on websites but not yet organized in a form useful for economic research. A second part of the paper considers online experiments, including experiments that the economic researcher observes but does not control (for example, when Amazon or eBay alters site design or bidding rules); and experiments in which a researcher participates in design, including those conducted in partnership with a company or website, and online versions of laboratory experiments. Finally, I discuss certain limits to this type of data collection, including both "terms of use" restrictions on websites and concerns about privacy and confidentiality.

### Jonathan Levin: 2011 John Bates Clark Medalist

- Journal of Economic Perspectives---2012---Liran Einav,Steven Tadelis

Jonathan Levin, the 2011 recipient of the American Economic Association's John Bates Clark Medal, has established himself as a leader in the fields of industrial organization and microeconomic theory. Jon has made important contributions in many areas: the economics of contracts and organizations; market design; markets with asymmetric information; and estimation methods for dynamic games. Jon's combination of breadth and depth is remarkable, ranging from important papers in very distinct areas such as economic theory and econometric methods to applied work that seamlessly integrates theory with data. In what follows, we will attempt to do justice not only to Jon's academic work, but also try to sketch a broader portrait of Jon's other contributions to economics as a gifted teacher, dedicated advisor, and selfless provider of public goods.

### Retrospectives: The Introduction of the Cobb-Douglas Regression

- Journal of Economic Perspectives---2012---Jeff Biddle

At the 1927 meetings of the American Economic Association, Paul Douglas presented a paper entitled "A Theory of Production," which he had coauthored with Charles Cobb. The paper proposed the now familiar Cobb-Douglas function as a mathematical representation of the relationship between capital, labor, and output. The paper's innovation, however, was not the function itself, which had originally been proposed by Knut Wicksell, but the use of the function as the basis of a statistical procedure for estimating the relationship between inputs and output. The paper's least squares regression of the log of the output-to-capital ratio in manufacturing on the log of the labor-to-capital ratio —the first Cobb-Douglas regression—was a realization of Douglas's innovative vision that a stable relationship between empirical measures of inputs and outputs could be discovered through statistical analysis, and that this stable relationship could cast light on important questions of economic theory and policy. This essay provides an account of the introduction of the Cobb-Douglas regression: its roots in Douglas's own work and in trends in economics in the 1920s, its initial application to time series data in the 1927 paper and

Douglas's 1934 book The Theory of Wages, and the early reactions of economists to this new empirical tool.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2012---Timothy Taylor

### Is There an Energy Efficiency Gap?

- Journal of Economic Perspectives---2012---Hunt Allcott,Michael Greenstone

Many analysts of the energy industry have long believed that energy efficiency offers an enormous "win-win" opportunity: through aggressive energy conservation policies, we can both save money and reduce negative externalities associated with energy use. In 1979, Daniel Yergin and the Harvard Business School Energy Project estimated that the United States could consume 30 or 40 percent less energy without reducing welfare. The central economic question around energy efficiency is whether there are investment inefficiencies that a policy could correct. First, we examine choices made by consumers and firms, testing whether they fail to make investments in energy efficiency that would increase utility or profits. Second, we focus on specific types of investment inefficiencies, testing for evidence consistent with each. Three key conclusions arise: First, the evidence presented in the long literature on the subject frequently does not meet modern standards for credibility. Second, when one tallies up the available empirical evidence from different contexts, it is difficult to substantiate claims of a pervasive Energy Efficiency Gap. Third, it is crucial that policies be targeted. Welfare gains will be larger from a policy that preferentially affects the decisions of those consumers subject to investment inefficiencies.

### Creating a Smarter U.S. Electricity Grid

- Journal of Economic Perspectives---2012---Paul Joskow

This paper focuses on efforts to build what policymakers call the "smart grid," involving 1) improved remote monitoring and automatic and remote control of facilities in high-voltage electricity transmission networks; 2) improved remote monitoring, two-way communications, and automatic and remote control of local distribution networks; and 3) installation of "smart" metering and associated communications capabilities on customer premises so that customers can receive real-time price information and/or take advantage of opportunities to contract with their retail supplier to manage the consumer's electricity demands remotely in response to wholesale prices and network congestion. I examine the opportunities, challenges, and uncertainties associated with investments in "smart grid" technologies. I discuss some basic electricity supply and demand, pricing, and physical network attributes that are critical for understanding the opportunities and challenges associated with expanding deployment of smart grid technologies. Then I cover issues associated with the deployment of these technologies at the high voltage transmission, local distribution, and end-use metering levels.

### Prospects for Nuclear Power

- Journal of Economic Perspectives---2012---Lucas Davis

Nuclear power has long been controversial because of concerns about nuclear accidents, storage of spent fuel, and how the spread of nuclear power might raise risks of the proliferation of nuclear weapons. These concerns are real and important. However, emphasizing these concerns implicitly suggests that unless these issues are taken into account, nuclear power would otherwise be cost effective compared to other forms of electricity generation. This implication is unwarranted. Throughout the history of nuclear power, a key challenge has been the high cost of construction for nuclear plants. Construction costs are high enough that it becomes difficult to make an economic argument for nuclear even before incorporating these external factors. This is particularly true in countries like the United States where recent technological advances have dramatically increased the availability of natural gas. The chairman of one of the largest U.S. nuclear companies recently said that his company would not break ground on a new nuclear plant until the price of natural gas was more than double today's level and carbon emissions cost $25 per ton. This comment summarizes the current economics of nuclear power pretty well. Yes, there is a certain confluence of factors that could make nuclear power a viable economic option. Otherwise, a nuclear power renaissance seems unlikely.

### The Private and Public Economics of Renewable Electricity Generation

- Journal of Economic Perspectives---2012---Severin Borenstein

Generating electricity from renewable sources is more expensive than conventional approaches but reduces pollution externalities. Analyzing the tradeoff is much more challenging than often presumed because the value of electricity is extremely dependent on the time and location at which it is produced, which is not very controllable with some renewables, such as wind and solar. Likewise, the pollution benefits from renewable generation depend on what type of generation it displaces, which also depends on time and location. Without incorporating these factors, cost-benefit analyses of alternatives are likely to be misleading. Other common arguments for subsidizing renewable power —green jobs, energy security, and driving down fossil energy prices—are unlikely to substantially alter the analysis. The role of intellectual property spillovers is a strong argument for subsidizing energy science research, but less persuasive as an enhancement to the value of installing current renewable energy technologies.

### Reducing Petroleum Consumption from Transportation

- Journal of Economic Perspectives---2012---Christopher Knittel

The United States consumes more petroleum-based liquid fuel per capita than any other OECD high-income country—30 percent more than the second-highest country (Canada) and 40 percent more than the third-highest (Luxembourg). The transportation sector accounts for 70 percent of U.S. oil consumption and 30 percent of U.S. greenhouse gas emissions. Taking the externalities associated with high U.S. gasoline consumption as largely given, I focus on understanding the policy tools that seek to reduce this consumption. I consider four main channels through which reductions in U.S. oil consumption might take place: 1) increased fuel economy of existing vehicles, 2) increased use of non-petroleum-based, low-carbon fuels, 3) alternatives to the internal combustion engine, and 4) reduced vehicle miles traveled. I then discuss how these policies for reducing petroleum consumption compare with the standard economics prescription for using a Pigouvian tax to deal with externalities. Taking into account that energy taxes are a political hot button in the United States, and also considering some evidence that consumers may not "correctly" value fuel economy, I offer some thoughts about the margins on which policy aimed at reducing petroleum consumption might usefully proceed.

### How Will Energy Demand Develop in the Developing World?

- Journal of Economic Perspectives---2012---Catherine Wolfram,Orie Shelef,Paul Gertler

Over the next 25 to 30 years, nearly all of the growth in energy demand, fossil fuel use, associated local pollution, and greenhouse gas emissions is forecast to come from the developing world. This paper argues that the world's poor and near-poor will play a major role in driving medium-run growth in energy consumption. As the world economy expands and poor households' incomes rise, they are likely to get connected to the electricity grid, gain access to good roads, and purchase energy-using assets like appliances and vehicles for the first time. We argue that the current forecasts for energy demand in the developing world may be understated because they do not accurately capture growth in demand along the extensive margin, as low-income households buy their first durable appliances and vehicles. Within a country, the adoption of energy-using assets typically follows an S-shaped pattern: among the very poor, we see little increase in the number of households owning refrigerators, vehicles, air conditioners, and other assets as incomes go up; above a first threshold income level, we see rapid increases of ownership with income; and above a second threshold, increases in ownership level off. A large share of the world's population has yet to go through the first transition, suggesting there is likely to be a large increase in the demand for energy in the coming years.

### The For-Profit Postsecondary School Sector: Nimble Critters or Agile Predators?

- Journal of Economic Perspectives---2012---David Deming,Claudia Goldin,Lawrence Katz

Private for-profit institutions have been the fastest-growing part of the U.S. higher education sector. For-profit enrollment increased from 0.2 percent to 9.1 percent of total enrollment in degree-granting schools from 1970 to 2009, and for-profit institutions account for the majority of enrollments in non-degree-granting postsecondary schools. We describe the schools, students, and programs in the for-profit higher education sector, its phenomenal recent growth, and its relationship to the federal and state governments. Using the 2004 to 2009 Beginning Postsecondary Students (BPS) longitudinal survey, we assess outcomes of a recent cohort of first-time undergraduates who attended for-profits relative to comparable students who attended community colleges or other public or private non-profit institutions. We find that relative to these other institutions, for-profits educate a larger fraction of minority, disadvantaged, and older students, and they have greater success at retaining students in their first year and getting them to complete short programs at the certificate and AA levels. But we also find that for-profit students end up with higher unemployment and "idleness" rates and lower earnings six years after entering programs than do comparable students from other schools and that, not surprisingly, they have far greater default rates on their loans.

### Student Loans: Do College Students Borrow Too Much--Or Not Enough?

- Journal of Economic Perspectives---2012---Christopher Avery,Sarah Turner

Total student loan debt rose to over $800 billion in June 2010, overtaking total credit card debt outstanding for the first time. By the time this article sees print, the continually updated Student Loan Debt Clock will show an accumulated total of roughly $1 trillion. Borrowing to finance educational expenditures has been increasing—more than quadrupling in real dollars since the early 1990s. The sheer magnitude of these figures has led to increased public commentary on the level of student borrowing. We move the discussion of student loans away from anecdote by establishing a framework for considering the use of student loans in the optimal financing of collegiate investments. From a financial perspective, enrolling in college is equivalent to signing up for a lottery with large expected gains—indeed, the figures presented here suggest that college is, on average, a better investment today than it was a generation ago—but it is also a lottery with significant probabilities of both larger positive, and smaller or even negative, returns. We look to available—albeit limited—evidence to assess which types of students are likely to be borrowing too much or too little.

### American Higher Education in Transition

- Journal of Economic Perspectives---2012---Ronald Ehrenberg

American higher education is in transition along many dimensions: tuition levels, faculty composition, expenditure allocation, pedagogy, technology, and more. During the last three decades, at private four-year academic institutions, undergraduate tuition levels increased each year on average by 3.5 percent more than the rate of inflation; the comparable increases for public four-year and public two-year institutions were 5.1 percent and 3.5 percent, respectively. Academic institutions have also changed how they allocate their resources. The percentage of faculty nationwide that is full-time has declined, and the vast majority of part-time faculty members do not have Ph.D.s. The share of institutional expenditures going to faculty salaries and benefits in both public and private institutions has fallen relative to the share going to nonfaculty uses like student services, academic support, and institutional support. There are changing modes of instruction, together with different uses of technology, as institutions reexamine the prevailing "lecture/discussion" format. A number of schools are charging differential tuition across students. This paper discusses these various changes, how they are distributed across higher education sectors, and their implications. I conclude with some speculations about the future of American education.

### Compensation for State and Local Government Workers

- Journal of Economic Perspectives---2012---Maury Gittleman,Brooks Pierce

Are state and local government workers overcompensated? In this paper, we step back from the highly charged rhetoric and address this question with the two primary data sources for looking at compensation of state and local government workers: the Current Population Survey conducted by the Bureau of the Census for the Bureau of Labor Statistics, and the Employer Costs for Employee Compensation microdata collected as part of the National Compensation Survey of the Bureau of Labor Statistics. In both data sets, the workers being hired in the public sector have higher skill levels than those in the private sector, so the challenge is to compare across sectors in a way that adjusts suitably for this difference. After controlling for skill differences and incorporating employer costs for benefits packages, we find that, on average, public sector workers in state government have compensation costs 3-10 percent greater than those for workers in the private sector, while in local government the gap is 10-19 percent. We caution that this finding is somewhat dependent on the chosen sample and specification, that averages can obscure broader differences in distributions, and that a host of worker and job attributes are not available to us in these data. Nonetheless, the data suggest that public sector workers, especially local government ones, on average, receive greater remuneration than observably similar private sector workers. Overturning this result would require, we think, strong arguments for particular model specifications, or different data.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2012---Timothy Taylor

### Neuroeconomic Foundations of Economic Choice--Recent Advances

- Journal of Economic Perspectives---2011---Ernst Fehr,Antonio Rangel

Neuroeconomics combines methods and theories from neuroscience psychology, economics, and computer science in an effort to produce detailed computational and neurobiological accounts of the decision-making process that can serve as a common foundation for understanding human behavior across the natural and social sciences. Because neuroeconomics is a young discipline, a sufficiently sound structural model of how the brain makes choices is not yet available. However, the contours of such a computational model are beginning to arise; and, given the rapid progress, there is reason to be hopeful that the field will eventually put together a satisfactory structural model. This paper has two goals: First, we provide an overview of what has been learned about how the brain makes choices in two types of situations: simple choices among small numbers of familiar stimuli (like choosing between an apple or an orange), and more complex choices involving tradeoffs between immediate and future consequences (like eating a healthy apple or a less-healthy chocolate cake). Second, we show that, even at this early stage, insights with important implications for economics have already been gained.

### It's about Space, It's about Time, Neuroeconomics and the Brain Sublime

- Journal of Economic Perspectives---2011---Marieke van Rooij,Guy Van Orden

Neuroeconomics has investigated which regions of the brain are associated with the factors contributing to economic decision making, emphasizing the position in space of brain areas associated with the factors of decision making—cognitive or emotive, rational or irrational. An alternative view of the brain has given priority to time over space, investigating the temporal patterns of brain dynamics to determine the nature of the brain's intrinsic dynamics, how its various activities change over time. These two ways of approaching the brain are contrasted in this essay to gauge the contemporary status of neuroeconomics.

### Molecular Genetics and Economics

- Journal of Economic Perspectives---2011---Jonathan P. Beauchamp,David Cesarini,Magnus Johannesson,Matthijs van der Loos,Philipp Koellinger,Patrick Groenen,James H. Fowler,J. Niels Rosenquist,Roy Thurik,Nicholas A. Christakis

The costs of comprehensively genotyping human subjects have fallen to the point where major funding bodies, even in the social sciences, are beginning to incorporate genetic and biological markers into major social surveys. How, if at all, should economists use and combine molecular genetic and economic data from these surveys? What challenges arise when analyzing genetically informative data? To illustrate, we present results from a "genome-wide association study" of educational attainment. We use a sample of 7,500 individuals from the Framingham Heart Study; our dataset contains over 360,000 genetic markers per person. We get some initially promising results linking genetic markers to educational attainment, but these fail to replicate in a second large sample of 9,500 people from the Rotterdam Study. Unfortunately such failure is typical in molecular genetic studies of this type, so the example is also cautionary. We discuss a number of methodological challenges that face researchers who use molecular genetics to reliably identify genetic associates of economic traits. Our overall assessment is cautiously optimistic: this new data source has potential in economics. But researchers and consumers of the genoeconomic literature should be wary of the pitfalls, most notably the difficulty of doing reliable inference when faced with multiple hypothesis problems on a scale never before encountered in social science.

### Genes, Eyeglasses, and Social Policy

- Journal of Economic Perspectives---2011---Charles Manski

Someone reading empirical research relating human genetics to personal outcomes must be careful to distinguish two types of work: An old literature on heritability attempts to decompose cross-sectional variation in observed outcomes into unobservable genetic and environmental components. A new literature measures specific genes and uses them as observed covariates when predicting outcomes. I will discuss these two types of work in terms of how they may inform social policy. I will argue that research on heritability is fundamentally uninformative for policy analysis, but make a cautious argument that research using genes as covariates is potentially informative.

### The Composition and Drawdown of Wealth in Retirement

- Journal of Economic Perspectives---2011---James Poterba,Steven Venti,David Wise

This paper presents evidence on the resources available to households as they enter retirement. It draws heavily on data collected by the Health and Retirement Study. We calculate the "potential additional annuity income" that households could purchase, given their holdings of non-annuitized financial assets at the start of retirement. We also consider the role of housing equity in the portfolios of retirement-age households and explore the extent to which households draw down housing equity and financial assets as they age. Because home equity is often conserved until very late in life, for many households it may provide some insurance against the risk of living longer than expected. Finally, we consider how our findings bear on a number of policy issues, such as the role for annuity defaults in retirement saving plans.

### Insuring Long-Term Care in the United States

- Journal of Economic Perspectives---2011---Jeffrey Brown,Amy Finkelstein

Long-term care expenditures constitute one of the largest uninsured financial risks facing the elderly in the United States and thus play a central role in determining the retirement security of elderly Americans. In this essay, we begin by providing some background on the nature and extent of long-term care expenditures and insurance against those expenditures, emphasizing in particular the large and variable nature of the expenditures and the extreme paucity of private insurance coverage. We then provide some detail on the nature of the private long-term care insurance market and the available evidence on the reasons for its small size, including private market imperfections and factors that limit the demand for such insurance. We highlight how the availability of public long-term care insurance through Medicaid is an important factor suppressing the market for private long-term care insurance. In the final section, we describe and discuss recent long-term care insurance public policy initiatives at both the state and federal level.

### Annuitization Puzzles

- Journal of Economic Perspectives---2011---Shlomo Benartzi,Alessandro Previtero,Richard Thaler

In his Nobel Prize acceptance speech given in 1985, Franco Modigliani drew attention to the "annuitization puzzle": that annuity contracts, other than pensions through group insurance, are extremely rare. Rational choice theory predicts that households will find annuities attractive at the onset of retirement because they address the risk of outliving one's income, but in fact, relatively few of those facing retirement choose to annuitize a substantial portion of their wealth. There is now a substantial literature on the behavioral economics of retirement saving, which has stressed that both behavioral and institutional factors play an important role in determining a household's saving accumulations. Self-control problems, inertia, and a lack of financial sophistication inhibit some households from providing an adequate retirement nest egg. However, interventions such as automatic enrollment and automatic escalation of saving over time as wages rise (the "save more tomorrow" plan) have shown success in overcoming these obstacles. We will show that the same behavioral and institutional factors that help explain savings behavior are also important in understanding 1) how families handle the process of decumulation once retirement commences and 2) why there seems to be so little demand to annuitize wealth at retirement.

### The Case for a Progressive Tax: From Basic Research to Policy Recommendations

- Journal of Economic Perspectives---2011---Peter Diamond,Emmanuel Saez

This paper presents the case for tax progressivity based on recent results in optimal tax theory. We consider the optimal progressivity of earnings taxation and whether capital income should be taxed. We critically discuss the academic research on these topics and when and how the results can be used for policy recommendations. We argue that a result from basic research is relevant for policy only if 1) it is based on economic mechanisms that are empirically relevant and first order to the problem, 2) it is reasonably robust to changes in the modeling assumptions, and 3) the policy prescription is implementable (i.e, is socially acceptable and not too complex). We obtain three policy recommendations from basic research that satisfy these criteria reasonably well. First, very high earners should be subject to high and rising marginal tax rates on earnings. Second, low-income families should be encouraged to work with earnings subsidies, which should then be phased-out with high implicit marginal tax rates. Third, capital income should be taxed. We explain why the famous zero marginal tax rate result for the top earner in the Mirrlees model and the zero capital income tax rate results of Chamley and Judd, and Atkinson and Stiglitz are not policy relevant in our view.

### When and Why Incentives (Don't) Work to Modify Behavior

- Journal of Economic Perspectives---2011---Uri Gneezy,Stephan Meier,Pedro Rey-Biel

First we discuss how extrinsic incentives may come into conflict with other motivations. For example, monetary incentives from principals may change how tasks are perceived by agents, with negative effects on behavior. In other cases, incentives might have the desired effects in the short term, but they still weaken intrinsic motivations. To put it in concrete terms, an incentive for a child to learn to read might achieve that goal in the short term, but then be counterproductive as an incentive for students to enjoy reading and seek it out over their lifetimes. Next we examine the research literature on three important examples in which monetary incentives have been used in a nonemployment context to foster the desired behavior: education; increasing contributions to public goods; and helping people change their lifestyles, particularly with regard to smoking and exercise. The conclusion sums up some lessons on when extrinsic incentives are more or less likely to alter such behaviors in the desired directions.

### Retrospectives: X-Efficiency

- Journal of Economic Perspectives---2011---Michael Perelman

In a 1966 article in the American Economic Review , Harvey Leibenstein introduced the concept of "X-efficiency": the gap between ideal allocative efficiency and actually existing efficiency. Leibenstein insisted that absent strong competitive pressure, firms are unlikely to use their resources efficiently, and he suggested that X-efficiency is pervasive. Leibenstein, of course, was attacking a fundamental economic assumption: that firms minimize costs. The X-efficiency article created a firestorm of criticism. At the forefront of Leibenstein's powerful critics was George Stigler, who was very protective of classical price theory. In terms of rhetorical success, Stigler's combination of brilliance and bluster mostly carried the day. While Leibenstein's response to Stigler was well reasoned, it never resonated with many economists, and Leibenstein remains undeservedly underappreciated. Leibenstein's challenge is as relevant today as it ever was.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2011---Timothy Taylor

### Why Economists Should Conduct Field Experiments and 14 Tips for Pulling One Off

- Journal of Economic Perspectives---2011---John List

In this introduction to the symposium, I first offer an overview of the spectrum of experimental methods in economics, from laboratory experiments to the field experiments that are the subject of this symposium. I then offer some thoughts about the potential gains from doing economic research using field experiments and my own mental checklist of 14 steps to improve the chances of carrying out an economics field experiment successfully.

### Mechanism Experiments and Policy Evaluations

- Journal of Economic Perspectives---2011---Jens Ludwig,Jeffrey Kling,Sendhil Mullainathan

Randomized controlled trials are increasingly used to evaluate policies. How can we make these experiments as useful as possible for policy purposes? We argue greater use should be made of experiments that identify the behavioral mechanisms that are central to clearly specified policy questions, what we call "mechanism experiments." These types of experiments can be of great policy value even if the intervention that is tested (or its setting) does not correspond exactly to any realistic policy option.

### The Role of Theory in Field Experiments

- Journal of Economic Perspectives---2011---David Card,Stefano DellaVigna,Ulrike Malmendier

We classify all published field experiments in five top economics journals from 1975 to 2010 according to how closely the experimental design and analysis are linked to economic theory. We find that the vast majority of field experiments (68 percent) are Descriptive studies that lack any explicit model; 18 percent are Single Model studies that test a single model-based hypothesis; 6 percent are Competing Models studies that test competing model-based hypotheses; and 8 percent are Parameter Estimation studies that estimate structural parameters in a completely specified model. We also classify laboratory experiments published in these journals over the same period and find that economic theory has played a more central role in the laboratory than in the field. Finally, we discuss in detail three sets of field experiments—on gift exchange, on charitable giving, and on negative income tax—that illustrate both the benefits and the potential costs of a tighter link between experimental design and theoretical underpinnings.

### Field Experiments with Firms

- Journal of Economic Perspectives---2011---Oriana Bandiera,Iwan Barankay,Imran Rasul

We discuss how the use of field experiments sheds light on long-standing research questions relating to firm behavior. We present insights from two classes of experiments—within and across firms—and draw common lessons from both sets. Field experiments within firms generally aim to shed light on the nature of agency problems. Along these lines, we discuss how field experiments have provided new insights on shirking behavior and the provision of monetary and nonmonetary incentives. Field experiments across firms generally aim to uncover firms' binding constraints by exogenously varying the availability of key inputs such as labor, physical capital, and managerial capital. We conclude by discussing some of the practical issues researchers face when designing experiments and by highlighting areas for further research.

### Economics and Emigration: Trillion-Dollar Bills on the Sidewalk?

- Journal of Economic Perspectives---2011---Michael Clemens

What is the greatest single class of distortions in the global economy? One contender for this title is the tightly binding constraints on emigration from poor countries. Vast numbers of people in low-income countries want to emigrate from those countries but cannot. How large are the economic losses caused by barriers to emigration? Research on this question has been distinguished by its rarity and obscurity, but the few estimates we have should make economists' jaws hit their desks. The gains to eliminating migration barriers amount to large fractions of world GDP—one or two orders of magnitude larger than the gains from dropping all remaining restrictions on international flows of goods and capital. When it comes to policies that restrict emigration, there appear to be trillion-dollar bills on the sidewalk.

### Eight Questions about Brain Drain

- Journal of Economic Perspectives---2011---John Gibson,David McKenzie

The term "brain drain" dominates popular discourse on high-skilled migration, and for this reason, we use it in this article. However, as Harry Johnson noted, it is a loaded phrase implying serious loss. It is far from clear that such a loss actually occurs in practice; indeed, there is an increasing recognition of the possible benefits that skilled migration can offer both for migrants and for sending countries. This paper builds upon a recent wave of empirical research to answer eight key questions underlying much of the brain drain debate: 1) What is brain drain? 2) Why should economists care about it? 3) Is brain drain increasing? 4) Is there a positive relationship between skilled and unskilled migration? 5) What makes brain drain more likely? 6) Does brain gain exist? 7) Do high-skilled workers remit, invest, and share knowledge back home? 8) What do we know about the fiscal and production externalities of brain drain?

### Migrant Remittances

- Journal of Economic Perspectives---2011---Dean Yang

This article is about the economics of migrant remittances sent to developing countries. I review the overall magnitude of remittances and what current research reveals about the motivations for migrant remittances and what effects they have. I discuss field experimental evidence on migrant desires for control over the uses of their remittances. I highlight some key distinctive characteristics of remittances—such as their high frequency and relatively small individual magnitudes—as well as recent experimental evidence on the effect of reductions in remittance transaction fees, and outline a research agenda on the microeconomics of remittance decision making. Finally, I discuss what the future holds for remittances, considering aggregate trends but also approaches likely to be taken by international development agencies, national governments, the private sector, and academic economists.

### Killing Me Softly: The Fetal Origins Hypothesis

- Journal of Economic Perspectives---2011---Douglas Almond,Janet Currie

In the epidemiological literature, the fetal origins hypothesis associated with David J. Barker posits that chronic, degenerative conditions of adult health, including heart disease and type 2 diabetes, may be triggered by circumstances decades earlier, particularly, by in utero nutrition. Economists have expanded on this hypothesis, investigating a broader range of fetal shocks and circumstances and have found a wealth of later-life impacts on outcomes including test scores, educational attainment, and income, along with health. In the process, they have provided some of the most credible observational evidence in support of the hypothesis. The magnitude of the impacts is generally large. Thus, the fetal origins hypothesis has not only survived contact with economics, but has flourished.

### Internal Migration in the United States

- Journal of Economic Perspectives---2011---Raven Molloy,Christopher Smith,Abigail Wozniak

This paper examines the history of internal migration in the United States since the 1980s. By most measures, internal migration in the United States is at a 30-year low. The widespread decline in migration rates across a large number of subpopulations suggests that broad-based economic forces are likely responsible for the decrease. An obvious question is the extent to which the recent housing market contraction and the recession may have caused this downward trend in migration: after all, relocation activity often involves both housing market activity and changes in employment. However, we find relatively small roles for both of these cyclical factors. While we will suggest a few other possible explanations for the recent decrease in migration, the puzzle remains. Finally, we compare U.S. migration to other developed countries. Despite the steady decline in U.S. migration, the commonly held belief that Americans are more mobile than their European counterparts still appears to hold true.

### Esther Duflo: 2010 John Bates Clark Medalist

- Journal of Economic Perspectives---2011---Christopher Udry

Esther Duflo, winner of the 2010 John Bates Clark Medal, has made extraordinary contributions to development economics. She exemplifies and has played a vital role in the renaissance of development economics over the past decade. She has erected and inspired a research apparatus all over the developing world that integrates large-scale field experiments with economic theory to yield important insights for development policy and our understanding of behavior and institutions in developing countries. I'll divide my discussion of Esther's work into four categories: educational production, the economic lives of the poor, women as decisionmakers, and a broad category of market and policy failures. I will then offer some thoughts on Esther's role as a scholar-activist.

### Retrospectives: Hume on Money, Commerce, and the Science of Economics

- Journal of Economic Perspectives---2011---Margaret Schabas,Carl Wennerlind

David Hume (1711-1776) is arguably the most esteemed philosopher to have written in the English language. During his lifetime, however, Hume was as well if not better known for his contributions to political economy, particularly for the essays published as the Political Discourses (1752). Hume left his mark on the economic thought of the physiocrats, the classical economists, and the American Federalists. Adam Smith, who met Hume circa 1750, was his closest friend and interlocutor for some 25 years. Among modern economists, Hume's essays on money and trade have informed theorists of both Keynesian and Monetarist persuasions. In this essay, we begin by discussing Hume's monetary economics, and then spell out his theory of economic development, noting his qualified enthusiasm for the modern commercial system. We end with an assessment of his views on the scientific standing of economics, specifically his counterintuitive argument that economics could be epistemologically superior to physics.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2011---Timothy Taylor

### The (Paper)Work of Medicine: Understanding International Medical Costs

- Journal of Economic Perspectives---2011---David M. Cutler,Dan P. Ly

This paper draws on international evidence on medical spending to examine what the United States can learn about making its healthcare system more efficient. We focus primarily on understanding contemporaneous differences in the level of spending, generally from the 2000s. Medical spending differs across countries either because the price of services differs (for example, a coronary bypass surgery operation may cost more in the United States than in other countries) or because people receive more services in some countries than in others (for example, more bypass surgery operations). Within the price category, there are two further issues: whether factors earn different returns across countries and whether more clinical or administrative personnel are required to deliver the same care in different countries. We first present the results of a decomposition of healthcare spending along these lines in the United States and in Canada. We then delve into each component in more detail—administrative costs, factor prices, and the provision of care received—bringing in a broader range of international evidence when possible. Finally, we touch upon the organization of primary and chronic disease care and discuss possible gains in that area.

### The Pragmatist's Guide to Comparative Effectiveness Research

- Journal of Economic Perspectives---2011---Amitabh Chandra,Anupam Jena,Jonathan Skinner

Following an acrimonious healthcare reform debate involving charges of "death panels," in 2010, Congress explicitly forbade the use of cost-effectiveness analysis in government programs of the Patient Protection and Affordable Care Act. In this context, comparative effectiveness research emerged as an alternative strategy to understand better what works in health care. Put simply, comparative effectiveness research compares the efficacy of two or more diagnostic tests, treatments, or health care delivery methods without any explicit consideration of costs . To economists, the omission of costs from an assessment might seem nonsensical, but we argue that comparative effectiveness research still holds promise. First, it sidesteps one problem facing cost-effectiveness analysis—the widespread political resistance to the idea of using prices in health care. Second, there is little or no evidence on comparative effectiveness for a vast array of treatments: for example, we don't know whether proton-beam therapy, a very expensive treatment for prostate cancer (which requires building a cyclotron and a facility the size of a football field) offers any advantage over conventional approaches. Most drug studies compare new drugs to placebos, rather than "head-to-head" with other drugs on the market, leaving a vacuum as to which drug works best. Finally, the comparative effectiveness research can prove a useful first step even in the absence of cost information if it provides key estimates of treatment effects. After all, such effects are typically expensive to determine and require years or even decades of data. Costs are much easier to measure, and can be appended at a later date as financial Armageddon draws closer.

### Patient Cost-Sharing and Healthcare Spending Growth

- Journal of Economic Perspectives---2011---Katherine Baicker,Dana Goldman

In this paper, we explore the role patient incentives play in slowing healthcare spending growth. Evidence suggests that while patients do indeed respond to financial incentives, cost-sharing does not uniformly improve value; rather, cost-sharing provisions must be deliberately structured and targeted to reduce care of low marginal value. Other mechanisms may be helpful in targeting particular populations or types of utilization. The spillover effects between privately insured and publicly insured populations as well as market imperfections suggest a potential role for public policy in promoting insurance design that slows spending growth while increasing the health that each dollar buys.

### Reforming Payments to Healthcare Providers: The Key to Slowing Healthcare Cost Growth While Improving Quality?

- Journal of Economic Perspectives---2011---Mark McClellan

This paper focuses on a broad movement toward a fundamentally different way of paying healthcare providers. The approach reaches beyond the old dichotomies about whether healthcare providers are reimbursed on a fee-for-service or a "capitated" or per-person payment. Instead, these reforms seek to create direct linkages between payments to healthcare providers and measures of the quality and efficiency of care. After an overview of payment reforms for healthcare providers and their welfare implications, this paper discusses a range of empirical studies. These often small-scale studies suggest that provider payment reforms in conjunction with greater attention to improving measurements of care quality and outcomes can have a significant impact on quality of care and, in some cases, resource use and costs of care.

### Evaluating the Medical Malpractice System and Options for Reform

- Journal of Economic Perspectives---2011---Daniel P. Kessler

The U.S. medical malpractice liability system has two principal objectives: to compensate patients who are injured through the negligence of healthcare providers and to deter providers from practicing negligently. In practice, however, the system is slow and costly to administer. It both fails to compensate patients who have suffered from bad medical care and compensates those who haven't. According to opinion surveys of physicians, the system creates incentives to undertake cost-ineffective treatments based on fear of legal liability—to practice "defensive medicine." The failures of the liability system and the high cost of health care in the United States have led to an important debate over tort policy. How well does malpractice law achieve its intended goals? How large of a problem is defensive medicine and can reforms to malpractice law reduce its impact on healthcare spending? The flaws of the existing system have led a number of states to change their laws in a way that would reduce malpractice liability—to adopt "tort reforms." Evidence from several studies suggests that wisely chosen reforms have the potential to reduce healthcare spending significantly with no adverse impact on patient health outcomes.

### Offshoring Bias in U.S. Manufacturing

- Journal of Economic Perspectives---2011---Susan Houseman,Christopher Kurz,Paul Lengermann,Benjamin Mandel

In this paper, we show that the substitution of imported for domestically produced goods and services—often known as offshoring—can lead to overestimates of U.S. productivity growth and value added. We explore how the measurement of productivity and value added in manufacturing has been affected by the dramatic rise in imports of manufactured goods, which more than doubled from 1997 to 2007. We argue that, analogous to the widely discussed problem of outlet substitution bias in the literature on the Consumer Price Index, the price declines associated with the shift to low-cost foreign suppliers are generally not captured in existing price indexes. Just as the CPI fails to capture fully the lower prices for consumers due to the entry and expansion of big-box retailers like Wal-Mart, import price indexes and the intermediate input price indexes based on them do not capture the price drops associated with a shift to new low-cost suppliers in China and other developing countries. As a result, the real growth of imported inputs has been understated. And if input growth is understated, it follows that the growth in multifactor productivity and real value added in the manufacturing sector have been overstated. We estimate that average annual multifactor productivity growth in manufacturing was overstated by 0.1 to 0.2 percentage point and real value added growth by 0.2 to 0.5 percentage point from 1997 to 2007. Moreover, this bias may have accounted for a fifth to a half of the growth in real value added in manufacturing output excluding the computer and electronics industry.

### The Minimum Legal Drinking Age and Public Health

- Journal of Economic Perspectives---2011---Christopher Carpenter,Carlos Dobkin

The Amethyst Initiative, signed by more than 100 college presidents and other higher education officials calls for a reexamination of the minimum legal drinking age in the United States. A central argument of the initiative is that the U.S. minimum legal drinking age policy results in more dangerous drinking than would occur if the legal drinking age were lower. A companion organization called Choose Responsibility explicitly proposes "a series of changes that will allow 18-20 year-olds to purchase, possess and consume alcoholic beverages." Does the age-21 drinking limit in the United States reduce alcohol consumption by young adults and its harms, or as the signatories of the Amethyst Initiative contend, is it "not working"? In this paper, we summarize a large and compelling body of empirical evidence which shows that one of the central claims of the signatories of the Amethyst Initiative is incorrect: setting the minimum legal drinking age at 21 clearly reduces alcohol consumption and its major harms. We use a panel fixed effects approach and a regression discontinuity approach to estimate the effects of the minimum legal drinking age on mortality, and we also discuss what is known about the relationship between the minimum legal drinking age and other adverse outcomes such as nonfatal injury and crime. We document the effect of the minimum legal drinking age on alcohol consumption and estimate the costs of adverse alcohol-related events on a per-drink basis. Finally we consider implications for the correct choice of a minimum legal drinking age.

### The Market for Charitable Giving

- Journal of Economic Perspectives---2011---John List

Through good and bad economic times, charitable gifts have continued to roll in largely unabated over the past half century. In a typical year, total charitable gifts of money now exceed 2 percent of gross domestic product. Moreover, charitable giving has nearly doubled in real terms since 1990, and the number of nonprofit organizations registered with the IRS grew by nearly 60 percent from 1995 to 2005. This study provides a perspective on the economic interplay of three types of actors: donors, charitable organizations, and government. How much is given annually? Who gives? Who are the recipients of these gifts? Would changes in the tax treatment of charitable contributions lead to more or less giving? How can charitable institutions design mechanisms to generate the greatest level of gifts? What about the effectiveness of seed money and matching grants?

### Incomplete Contracts and the Theory of the Firm: What Have We Learned over the Past 25 Years?

- Journal of Economic Perspectives---2011---Philippe Aghion,Richard Holden

Sanford Grossman and Oliver Hart used the theory of incomplete contracts to develop answers to the question "What is a firm, and what determines its boundaries?"

in their path-breaking paper on "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration" ( Journal of Political Economy , 1986, vol. 94, no. 4). Perhaps the central issue is that economic actors are only boundedly rational and cannot anticipate all possible contingencies. It might well be that certain states of nature or actions cannot be verified by third parties after they arise, like certain qualities of a good to be traded in the future, and thus cannot be written into an enforceable contract. When contracts are incomplete, and consequently not all uses of an asset can be specified in advance, any contract negotiated in advance must leave some discretion over the use of the assets; and the "owner" of the firm is the party to whom the residual rights of control have been allocated at the contracting stage. The optimal allocation of property rights—or governance structure—is one that minimizes efficiency losses. This produces a theory of ownership and vertical integration as well as a theory of the firm. First we spell out Grossman and Hart's argument using a simple numerical example. Then we show how the incomplete contracts approach can be used to analyze the firms' internal organization; the firms' financial decisions; the costs and benefits from privatization; and the organization of international trade between inter- and intrafirm trade. We discuss several criticisms of the incomplete contracts/property rights methodology and review recent developments of the incomplete contracts approach.

### Retrospectives: Lionel W. McKenzie and the Proof of the Existence of a Competitive Equilibrium

- Journal of Economic Perspectives---2011---E. Roy Weintraub

The theorem proving the existence of general equilibrium in a competitive economy, which necessarily involved specifying the conditions under which such an equilibrium would exist, is an extraordinary achievement of twentieth-century economics. The discovery is commonly attributed to a paper by (eventual) Nobel Prize winners Kenneth Arrow and Gerard Debreau: "Existence of an Equilibrium for a Competitive Economy," published in the July 1954 issue of Econometrica . However it is less well-known that Lionel McKenzie published a paper in the previous issue of Econometrica , "On Equilibrium in Graham's Model of World Trade and Other Competitive Systems," that discussed many of the same themes. Both papers established the existence of a competitive equilibrium for suitable general equilibrium models and employed fixed point theorem arguments. McKenzie had priority in publication in 1954 and received credit for simultaneous discovery in prominent sources around that time. But over the years, McKenzie's role in creating the proof of the existence of a general equilibrium seems to have faded from the collective consciousness of the economics profession. Newly available archival material permits a reexamination of the events surrounding the publication of both Econometrica papers in 1954. The story raises general issues concerning "simultaneous discovery," "priority," and "credit" in economic research and opens a window into some academic practices of that time.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2011---Timothy Taylor

### A Macroprudential Approach to Financial Regulation

- Journal of Economic Perspectives---2011---Samuel G. Hanson,Anil Kashyap,Jeremy Stein

Many observers have argued that the regulatory framework in place prior to the global financial crisis was deficient because it was largely "microprudential" in nature. A microprudential approach is one in which regulation is partial equilibrium in its conception and aimed at preventing the costly failure of individual financial institutions. By contrast, a "macroprudential" approach recognizes the importance of general equilibrium effects, and seeks to safeguard the financial system as a whole. In the aftermath of the crisis, there seems to be agreement among both academics and policymakers that financial regulation needs to move in a macroprudential direction. In this paper, we offer a detailed vision for how a macroprudential regime might be designed. Our prescriptions follow from a specific theory of how modern financial crises unfold and why both an unregulated financial system, as well as one based on capital rules that only apply to traditional banks, is likely to be fragile. We begin by identifying the key market failures at work: why individual financial firms, acting in their own interests, deviate from what a social planner would have them do. Next, we discuss a number of concrete steps to remedy these market failures. We conclude the paper by comparing our proposals to recent regulatory reforms in the United States and to proposed global banking reforms.

### Fire Sales in Finance and Macroeconomics

- Journal of Economic Perspectives---2011---Andrei Shleifer,Robert Vishny

Analysts of the recent financial crisis often refer to the role of asset "fire sales" in depleting the balance sheets of financial institutions and aggravating the fragility of the financial system. The term "fire sale" has been around since the nineteenth century to describe firms selling smoke-damaged merchandise at cut-rate prices in the aftermath of a fire. But what are fire sales in broad financial markets with hundreds of participants? As we suggested in a 1992 paper, a fire sale is essentially a forced sale of an asset at a dislocated price. The asset sale is forced in the sense that the seller cannot pay creditors without selling assets. The price is dislocated because the highest potential bidders are typically involved in a similar activity as the seller, and are therefore themselves indebted and cannot borrow more to buy the asset. Indeed, rather than bidding for the asset, they might be selling similar assets themselves. Assets are then bought by nonspecialists who, knowing that they have less expertise with the assets in question, are only willing to buy at valuations that are much lower. In this paper, we selectively review some of the research on fire sales, emphasizing both concepts and supporting evidence. We begin by describing our 1992 model of fire sales and the related findings in empirical corporate finance. We then show that models of fire sales can account for several related phenomena during the recent financial crisis, including the contraction of the banking system and the failures of arbitrage in financial markets exemplified by historically unprecedented differences in prices of very similar securities. We then link fire sales to macroeconomics by discussing how such dislocations of security prices and the reduction in balance sheets of banks can reduce investment and output. Finally, we consider how the concept of fire sales can help us think about government interventions in financial markets, including the evidently successful Federal Reserve interventions in 2009. Fire sales are surely not the whole story of the financial crisis, but they are a phenomenon that binds together many elements of the crisis.

### Over the Cliff: From the Subprime to the Global Financial Crisis

- Journal of Economic Perspectives---2011---Frederic Mishkin

The financial crisis of 2007 to 2009 can be divided into two distinct phases. The first and more limited phase from August 2007 to August 2008 stemmed from losses in one relatively small segment of the U.S. financial system—namely, subprime residential mortgages. Despite this disruption to financial markets, real GDP in the United States continued to rise into the second quarter of 2008, and forecasters were predicting only a mild recession. In mid-September 2008, however, the financial crisis entered a far more virulent phase. In rapid succession, the investment bank Lehman Brothers entered bankruptcy on September 15, 2008; the insurance firm AIG collapsed on September 16, 2008; there was a run on the Reserve Primary Fund money market fund on the same day; and the highly publicized struggle to pass the Troubled Asset Relief Program (TARP) began. How did something that appeared in mid-2008 to be a significant but fairly mild financial disruption transform into a full-fledged global financial crisis? What caused this transformation? Did the government responses to the global financial crisis help avoid a worldwide depression? What challenges do these government interventions raise for the world financial system and the economy going forward?

### A Year of Living Dangerously: The Management of the Financial Crisis in 2008

- Journal of Economic Perspectives---2011---Vincent Reinhart

There are many reasons to regret the decision of U.S. financial authorities to insert the government into the resolution of the investment bank Bear Stearns in March 2008. The Federal Reserve's use of its discount window built up false hope of future rescues. Paying off the uninsured creditors of Bear Stearns overcompensated them at the time and invited speculative attacks on the equity of similarly situated firms. I will argue that the market seizure after Lehman Brothers' decision to seek the protection of bankruptcy was an echo of the prior official decision to protect Bear Stearns.

### Consumer Financial Protection

- Journal of Economic Perspectives---2011---John Campbell,Howell E. Jackson,Brigitte Madrian,Peter Tufano

The recent financial crisis has led many to question how well businesses deliver services and how well regulatory institutions address problems in consumer financial markets. This paper discusses consumer financial regulation, emphasizing the full range of arguments for regulation that derive from market failure and from limited consumer rationality in financial decision making. We present three case studies—of mortgage markets, payday lending, and financing retirement consumption —to illustrate the need for, and limits of, regulation. We argue that if regulation is to be beneficial, it must be tailored to specific problems and must be accompanied by research to measure the effectiveness of regulatory interventions.

### Selection in Insurance Markets: Theory and Empirics in Pictures

- Journal of Economic Perspectives---2011---Liran Einav,Amy Finkelstein

Government intervention in insurance markets is ubiquitous and the theoretical basis for such intervention, based on classic work from the 1970s, has been the problem of adverse selection. Over the last decade, empirical work on selection in insurance markets has gained considerable momentum. This research finds that adverse selection exists in some insurance markets but not in others. And it has uncovered examples of markets that exhibit "advantageous selection"—a phenomenon not considered by the original theory, and one that has different consequences for equilibrium insurance allocation and optimal public policy than the classical case of adverse selection. Advantageous selection arises when the individuals who are willing to pay the most for insurance are those who are the most risk averse (and so have the lowest expected cost). Indeed, it is natural to think that in many instances individuals who value insurance more may also take action to lower their expected costs: drive more carefully, invest in preventive health care, and so on. Researchers have taken steps toward estimating the welfare consequences of detected selection and of potential public policy interventions. In this essay, we present a graphical framework for analyzing both theoretical and empirical work on selection in insurance markets. This graphical approach provides both a useful and intuitive depiction of the basic theory of selection and its implications for welfare and public policy, as well as a lens through which one can understand the ideas and limitations of existing empirical work on this topic.

### Who Pays for Obesity?

- Journal of Economic Perspectives---2011---Jay Bhattacharya,Neeraj Sood

Adult obesity is a growing problem. From 1962 to 2006, obesity prevalence nearly tripled to 35.1 percent of adults. The rising prevalence of obesity is not limited to a particular socioeconomic group and is not unique to the United States. Should this widespread obesity epidemic be a cause for alarm? From a personal health perspective, the answer is an emphatic "yes." But when it comes to justifications of public policy for reducing obesity, the analysis becomes more complex. A common starting point is the assertion that those who are obese impose higher health costs on the rest of the population—a statement which is then taken to justify public policy interventions. But the question of who pays for obesity is an empirical one, and it involves analysis of how obese people fare in labor markets and health insurance markets. We will argue that the existing literature on these topics suggests that obese people on average do bear the costs and benefits of their eating and exercise habits. We begin by estimating the lifetime costs of obesity. We then discuss the extent to which private health insurance pools together obese and thin, whether health insurance causes obesity, and whether being fat might actually cause positive externalities for those who are not obese. If public policy to reduce obesity is not justified on the grounds of external costs imposed on others, then the remaining potential justification would need to be on the basis of helping people to address problems of ignorance or self-control that lead to obesity. In the conclusion, we offer a few thoughts about some complexities of such a justification.

### Priceless: The Nonpecuniary Benefits of Schooling

- Journal of Economic Perspectives---2011---Philip Oreopoulos,Kjell G Salvanes

Increasing wealth provides key motivation for students to forgo earnings and struggle through exams. But, as we argue in this paper, schooling generates many experiences and affects many dimensions of skill that, in turn, affect central aspects of individuals' lives. Schooling not only affects income, but also the degree to which one enjoys work, as well as one's likelihood of being unemployed. It leads individuals to make better decisions about health, marriage, and parenting. It also improves patience, making individuals more goal-oriented and less likely to engage in risky behavior. Schooling improves trust and social interaction, and may offer substantial consumption value to some students. We discuss various mechanisms to explain how these relationships may occur independent of wealth effects and present evidence that nonpecuniary returns to schooling are at least as large as pecuniary ones. Ironically, one explanation why some early school leavers miss out on these high returns is that they lack the very same decision-making skills that more schooling would help improve.

### Lessons from the Kibbutz on the Equality-Incentives Trade-Off

- Journal of Economic Perspectives---2011---Ran Abramitzky

The first kibbutz was established southwest of the Sea of Galilee in 1910, but the vast majority of kibbutzim were established in the 1930s and 1940s, shortly before the creation of the state of Israel in 1948. Founders aimed to create a "new human being" who cared about the group more than about himself, a homo sociologicus who would challenge the selfish homo economicus. This idealistic view can explain many of the key features of kibbutzim: equal sharing in the distribution of income; no private property; a noncash economy; communal dining halls where members ate their meals together; high provision of local public goods for use by kibbutz members; separate communal residences for children outside their parents homes, which were supposed to free women from their traditional role in society and allow them to be treated equally with men; collective education to instill socialist and Zionist values; communal production, whereby kibbutz members worked inside their kibbutzim in agriculture or in one of the kibbutz plants; and no use of hired labor from outside kibbutzim—because hiring labor was considered "exploitation" under the reigning socialist ideology. To an economist, steeped in thinking about incentives that self-interested individuals face, there are three reasons why an equal-sharing arrangement of this sort seems unlikely to last. First, high-ability members have an incentive to exit equal-sharing arrangements to earn a wage premium—so-called "brain drain." Second, low-ability individuals have an incentive to enter equal-sharing arrangements so that they can be subsidized by more-able individuals—so-called adverse selection. Third, in context of equal sharing, shirking and free-riding are likely to be prevalent. However, kibbutzim have survived successfully for the past century and currently consist of 120,000 members living in 268 kibbutzim. In a number of ways, the kibbutzim offer an exceptional environment to examine the potential trade-off between equality and incentives.

### Behavior under Extreme Conditions: The Titanic Disaster

- Journal of Economic Perspectives---2011---Bruno Frey,David A. Savage,Benno Torgler

During the night of April 14, 1912, the RMS Titanic collided with an iceberg on her maiden voyage. Two hours and 40 minutes later she sank, resulting in the loss of 1,501 lives—more than two-thirds of her 2,207 passengers and crew. This remains one of the deadliest peacetime maritime disasters in history and by far the most famous. For social scientists, evidence about how people behaved as the Titanic sunk offers a quasi-natural field experiment to explore behavior under extreme conditions of life and death. A common assumption is that in such situations, self-interested reactions will predominate and social cohesion is expected to disappear. However, empirical evidence on the extent to which people in the throes of a disaster react with self-regarding or with other-regarding behavior is scanty. The sinking of the Titanic posed a life-or-death situation for its passengers. The Titanic carried only 20 lifeboats, which could accommodate about half the people aboard, and deck officers exacerbated the shortage by launching lifeboats that were partially empty. Failure to secure a seat in a lifeboat virtually guaranteed death. We have collected individual-level data on the passengers and crew on the Titanic, which allow us to analyze some specific questions: Did physical strength (being male and in prime age) or social status (being a first- or second-class passenger) raise the survival chance? Was it favorable for survival to travel alone or in company? Does one's role or function (being a crew member or a passenger) affect the probability of survival? Do social norms, such as "Women and children first!" have any effect? Does nationality affect the chance of survival? We also explore whether the time from impact to sinking might matter by comparing the sinking of the Titanic over nearly three hours to the sinking of the Lusitania in 1915, which took only 18 minutes from when the torpedo hit the ship.

### Retrospectives: The Phillips Curve: A Rushed Job?

- Journal of Economic Perspectives---2011---Allan Sleeman

Half a century ago, Economica published what its webpage claims is "the most heavily cited macroeconomics title of the 20th century"—the paper by A. W. H. "Bill" Phillips (1958) that introduced the Phillips curve. Based on admittedly circumstantial evidence, I will argue that Bill Phillips was not satisfied with the paper and had not intended to publish it in 1958. I believe that Phillips was persuaded to allow his paper to be published in 1958 by James Meade. After a brief overview of Phillips' early life and career, I attempt to show why Phillips was probably unhappy with the paper that introduced the curve that came to be identified with his name and how, nevertheless, it came to be published.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2011---Timothy Taylor

### Why Does the Economy Fall to Pieces after a Financial Crisis?

- Journal of Economic Perspectives---2010---Robert Hall

The worst financial crisis in the history of the United States and many other countries started in 1929. The Great Depression followed. The second-worst struck in the fall of 2008 and the Great Recession followed. Commentators have dwelt endlessly on the causes of these and other deep financial collapses. This article pursues modern answers to a different question: why does output and employment collapse after a financial crisis and remain at low levels for several or many years after the crisis. It focuses on events in the United States since 2008. Existing macroeconomic models account successfully for the immediate effects of a financial crisis on output and employment. I will lay out a simple macro model that captures the most important features of modern models and show that realistic increases in financial frictions that occurred in the crisis of late 2008 will generate declines in real GDP and employment of the magnitude that occurred. But this model cannot explain why GDP and employment failed to recover once the financial crisis subsided—the model implies a recovery as soon as financial frictions return to normal. At the end of the article, I will mention some ideas that are in play to explain the persistent adverse effects of temporary crises, but have yet to be incorporated into the mainstream model.

### Financial Intermediation and Macroeconomic Analysis

- Journal of Economic Perspectives---2010---Michael Woodford

Understanding phenomena such as the recent financial crisis, and possible policy responses, requires the use of a macroeconomic framework in which financial intermediation matters for the allocation of resources. Neither standard macroeconomic models that abstract from financial intermediation nor traditional models of the "bank lending channel" are adequate as a basis for understanding the recent crisis. Instead we need models in which intermediation plays a crucial role, but in which intermediation is modeled in a way that better conforms to current institutional realities. In particular, we need models that recognize that a market-based financial system—one in which intermediaries fund themselves by selling securities in competitive markets, rather than collecting deposits subject to reserve requirements—is not the same as a frictionless system. I sketch the basic elements of an approach that allows financial intermediation and credit frictions to be integrated into macroeconomic analysis in a straightforward way. I show how the model can be used to analyze the macroeconomic consequences of the recent financial crisis and conclude with a discussion of some implications of the model for the conduct of monetary policy.

### The Economic Crisis from a Neoclassical Perspective

- Journal of Economic Perspectives---2010---Lee Ohanian

This paper assesses the 2007-2009 recession using neoclassical business cycle theory. I find that the 2007-2009 U.S. recession differs substantially from other postwar U.S. recessions, and also from the 2008 recession in other countries, in that lower labor input accounts for virtually all of the decline in income and output in the United States, while lower productivity accounts for much of other U.S. recessions and the 2007-2009 recession in other countries. I also find that existing classes of models, including financial market imperfections models, do not explain the U.S. recession. This is because the 2007-2009 recession is almost exclusively related to what appear to be labor market distortions that drive a wedge between the marginal product of labor and the marginal rate of substitution between consumption and leisure, a topic about which current classes of financial imperfection models are largely silent. I discuss future avenues for developing this class of models, and I consider alternative hypotheses for the recession, including the view of John Taylor and others that economic policies intended to help manage the crisis, actually deepened the recession by increasing uncertainty and distorting incentives.

### Natural Expectations and Macroeconomic Fluctuations

- Journal of Economic Perspectives---2010---Andreas Fuster,David Laibson,Brock Mendel

A large body of empirical evidence suggests that beliefs systematically deviate from perfect rationality. Much of the evidence implies that economic agents tend to form forecasts that are excessively influenced by recent changes. We present a parsimonious quasi-rational model that we call natural expectations, which falls between rational expectations and (naïve) intuitive expectations. (Intuitive expectations are formed by running growth regressions with a limited number of right-hand-side variables, and this leads to excessively extrapolative beliefs in certain classes of environments). Natural expectations overstate the long-run persistence of economic shocks. In other words, agents with natural expectations turn out to form beliefs that don't sufficiently account for the fact that good times (or bad times) won't last forever. We embed natural expectations in a simple dynamic macroeconomic model and compare the simulated properties of the model to the available empirical evidence. The model's predictions match many patterns observed in macroeconomic and financial time series, such as high volatility of asset prices, predictable up-and-down cycles in equity returns, and a negative relationship between current consumption growth and future equity returns.

### Macroeconomics after the Crisis: Time to Deal with the Pretense-of-Knowledge Syndrome

- Journal of Economic Perspectives---2010---Ricardo Caballero

The recent financial crisis has damaged the reputation of macroeconomics, largely for its inability to predict the impending financial and economic crisis. To be honest, this inability to predict does not concern me much. It is almost tautological that severe crises are essentially unpredictable, for otherwise they would not cause such a high degree of distress. What does concern me about my discipline is that its current core—by which I mainly mean the so-called dynamic stochastic general equilibrium approach—has become so mesmerized with its own internal logic that it has begun to confuse the precision it has achieved about its own world with the precision that it has about the real one. This is dangerous for both methodological and policy reasons. To be fair to our field, an enormous amount of work at the intersection of macroeconomics and corporate finance has been chasing many of the issues that played a central role during the current crisis, including liquidity evaporation, collateral shortages, bubbles, crises, panics, fire sales, risk-shifting, contagion, and the like. However, much of this literature belongs to the periphery of macroeconomics rather than to its core. I will discuss the distinction between the core and the periphery of macroeconomics as well as the futile nature of the integrationist movement—that is, the process of gradually bringing the insights of the periphery into the dynamic stochastic general equilibrium structure. I argue that the complexity of macroeconomic interactions limits the knowledge we can ever attain, and that we need to place this fact at the center of our analysis. We should consider what this complexity does to the actions and reactions of the economic agent, and seek analytical tools and macroeconomic policies that are robust to the enormous uncertainty to which we are confined.

### Treasure Islands

- Journal of Economic Perspectives---2010---James Hines

In movies and novels, tax havens are often settings for shady international deals; in practice, they are rather less flashy. Tax havens, also known as "offshore financial centers" or "international financial centers," are countries and territories that offer low tax rates and favorable regulatory policies to foreign investors. For example, tax havens typically tax inbound investment at zero or very low rates and further encourage investment with telecommunications and transportation facilities, other business infrastructure, favorable legal environments, and limited bureaucratic hurdles to starting new firms. Tax havens are small; most are islands; all but a few have populations below one million; and they have above-average incomes. The United States and other higher-tax countries frequently express concerns over how tax havens may affect their economies. Do they erode domestic tax collections; attract economic activity away from higher-tax countries; facilitate criminal activities; or reduce the transparency of financial accounts and so impede the smooth operation and regulation of legal and financial systems around the world? Do they contribute to excessive international tax competition? These concerns are plausible, albeit often founded on anecdotal rather than systematic evidence. Yet tax haven policies may also benefit other economies and even facilitate the effective operation of the tax systems of other countries. This paper evaluates evidence of the economic effects of tax havens.

### Shopping for Anonymous Shell Companies: An Audit Study of Anonymity and Crime in the International Financial System

- Journal of Economic Perspectives---2010---J. C. Sharman

The last few years have seen an international campaign to ensure that the world's financial and banking systems are "transparent," meaning that every actor and transaction within the system can be traced to a discrete, identifiable individual. I present an audit study of compliance with the prohibitions on anonymous shell companies. In particular, I describe my attempts to found anonymous corporate vehicles without proof of identity and then to establish corporate bank accounts for these vehicles. (Transactions processed through the corporate account of such a "shell company" become effectively untraceable—and thus very useful for those looking to hide criminal profits, pay or receive bribes, finance terrorists, or escape tax obligations.) I solicited offers of anonymous corporate vehicles from 54 different corporate service providers in 22 different countries, and collated the responses to determine whether the existing legal and regulatory prohibitions on anonymous corporate vehicles actually work in practice. To foreshadow the results, it seems that small island offshore centers may have standards for corporate transparency and disclosure that are higher than major OECD economies like the United States and the United Kingdom.

### Activist Fiscal Policy

- Journal of Economic Perspectives---2010---Alan Auerbach,William Gale,Benjamin H. Harris

During and after the "Great Recession" that began in December 2007, the U.S. federal government enacted several rounds of activist fiscal policy. In this paper, we review the recent evolution of thinking and evidence regarding the effectiveness of activist fiscal policy. Although fiscal interventions aimed at stimulating and stabilizing the economy have returned to common use, their efficacy remains controversial. We review the debate about the traditional types of fiscal policy interventions, such as broad-based tax cuts and spending increases, as well as more targeted policies. While there have been improvements in estimates of the effects of broad-based policies, much of what has been learned recently concerns how such multipliers might vary with respect to economic conditions, such as the credit market disruptions and very low interest rates that were central features of the Great Recession. The eclectic and innovative interventions by the Federal Reserve and other central banks during this period highlight the imprecise divisions between monetary and fiscal policy and the many channels through which fiscal policies can be implemented.

### Catastrophe Economics: The National Flood Insurance Program

- Journal of Economic Perspectives---2010---Erwann Michel-Kerjan

Hurricane Betsy, which hit Louisiana September 9, 1965, was one of the most intense, deadly, and costly storms ever to make landfall in the United States: it killed 76 people in Louisiana and caused $1.5 billion in damage—equal to nearly $10 billion in 2010 dollars. In 1965, no flood insurance was available, so victims had to rely on friends and family, charities, or federal relief. After that catastrophe, the U.S. government established a new program in 1968—the National Flood Insurance Program (NFIP)—to make flood insurance widely available. Now, after more than 40 years of operation, the NFIP is today one of the longest standing government-run disaster insurance programs in the world. In this paper, I present an overview of the 40 years of operation of the National Flood Insurance Program, starting with how and why it was created and how it has evolved to now cover $1.23 trillion in assets. I analyze the financial balance of the NFIP between 1969 and 2008. Excluding the 2005 hurricane season (which included Hurricane Katrina) as an outlier, policyholders have paid nearly $11 billion more in premiums than they have received in claim reimbursements over that period. However, the program has spent an average of 40 percent of all collected premiums on administrative expenses, more than three quarters of which were paid to private insurance intermediaries who sell and manage flood insurance policies on behalf of the federal government but do not bear any risk. I present challenges the NFIP faces today and propose ways those challenges might be overcome through innovative modifications.

### The Job Market for New Economists: A Market Design Perspective

- Journal of Economic Perspectives---2010---Peter Coles,John Cawley,Phillip Levine,Muriel Niederle,Alvin Roth,John Siegfried

This paper, written by the members of the American Economic Association (AEA) Ad Hoc Committee on the Job Market, provides an overview of the market for new Ph.D. economists. It describes the role of the AEA in the market and focuses in particular on two mechanisms adopted in recent years at the suggestion of our Committee. First, job market applicants now have a signaling service to send an expression of special interest to up to two employers prior to interviews at the January Allied Social Science Associations (ASSA) meetings. Second, the AEA now invites candidates who are still on the market, and employers whose positions are still vacant, to participate in a web-based "scramble" to reduce search costs and thicken the late part of the job market. We present statistics on the activity in these market mechanisms and present survey evidence that both mechanisms have facilitated matches. The paper concludes by discussing the emergence of platforms for transmitting job market information and other design issues that may arise in the market for new economists.

### Retrospectives: An Early Supply-Side-Demand-Side Controversy: Petty, Law, Cantillon

- Journal of Economic Perspectives---2010---John Berdell

Early modern Europe in the late seventeenth and early eighteenth centuries witnessed an unprecedented increase in the rate of economic growth, and governments entertained a wide range of proposals aimed at developing and harnessing foreign trade and emerging financial markets. In his magisterial survey of foreign trade doctrine titled Studies in the Theory of International Trade (1936), Jacob Viner pointed out that enlightened authors of that time were often nonbullionist mercantilists: they favored export promotion and import reduction not on the grounds that it would lead to an accumulation of gold, but on the grounds that it would increase trade and employment. My focus here is on how some key economists of this time period—William Petty, John Law, and Richard Cantillon—adumbrated disputes between supply-side and demand-side macroeconomics that have continued to the present day.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2010---Timothy Taylor

### Understanding the Mechanisms of Economic Development

- Journal of Economic Perspectives---2010---Angus Deaton

In this paper, I advocate the investigation, testing, and modification of mechanisms as a progressive empirical research strategy for the field of economic development (and other areas of applied economics). I discuss three lines of work that have elucidated mechanisms that are relevant for development: 1) connections between saving and growth; 2) the determinants of commodity prices, which are a key source of income for many developing countries; and 3) some unexpected puzzles that arise in considering the linkages between income and food consumption. In each case, my discussion illustrates the positivist approach to the hypotheticodeductive method. In this approach, mechanisms are proposed, key predictions derived and tested, and if falsified, the mechanisms are rejected or modified. If the predictions of a mechanism are confirmed, if they are sufficiently specific, and if they are hard to explain in other ways, we attach additional credence to the mechanism, albeit provisionally since later evidence may undermine it. Sometimes the falsifications can be repaired by changing supplementary assumptions, and sometimes they involve long steps backwards where the model is abandoned; and often there is disagreement about which is the correct response. But the end result is an accumulation of useful knowledge and understanding.

### Theory, General Equilibrium, and Political Economy in Development Economics

- Journal of Economic Perspectives---2010---Daron Acemoglu

I discuss the role of economic theory in empirical work in development economics with special emphasis on general equilibrium and political economy considerations. I argue that economic theory plays (should play) a central role in formulating models, estimates of which can be used for counterfactual and policy analysis. I discuss why counterfactual analysis based on microdata that ignores general equilibrium and political economy issues may lead to misleading conclusions. I illustrate the main arguments using examples from recent work in development economics and political economy.

### Diagnostics before Prescription

- Journal of Economic Perspectives---2010---Dani Rodrik

Development economists should stop acting as categorical advocates (or detractors) for specific approaches to development. They should instead be diagnosticians, helping decisionmakers choose the right model (and remedy) for their specific realities, among many contending models (and remedies). In this spirit, Ricardo Hausmann, Andres Velasco, and I have developed a "growth diagnostics" framework that sketches a systematic process for identifying binding constraints and prioritizing policy reforms in multilateral agencies and bilateral donors. Growth diagnostics is based on the idea that not all constraints bind equally and that a sensible and practical strategy consists of identifying the most serious constraint(s) at work. The practitioner works with a decision tree to do this. The second step in growth diagnostics is to identify remedies for relaxing the constraint that are appropriate to the context and take cognizance of potential second-best complications. Successful countries are those that have implemented these two steps in an ongoing manner: identify sequentially the most binding constraints and remove them with locally suited remedies. Diagnostics requires pragmatism and eclecticism, in the use of both theory and evidence. It has no room for dogmatism, imported blueprints, or empirical purism.

### Uneven Growth: A Framework for Research in Development Economics

- Journal of Economic Perspectives---2010---Debraj Ray

The textbook paradigm of economywide development rests on the premise of "balanced growth": that is, on the presumption that all sectors will grow in unison over time as a country gets richer. Of course, we would all agree that balanced growth is an abstraction. In many developing countries, economic growth has been fundamentally uneven. The question really is not whether growth is balanced -- it isn't -- but whether the abstraction is a useful one. For many important development questions, I believe the answer is no. This is why I would like to take the reality of "uneven growth" seriously and use it as an organizing device for a research program. I divide my research agenda into roughly two parts: the sources and nature of uneven growth, and the reactions to uneven growth -- how forces are set in motion to restore balance or perhaps even to thwart the growth process. To help us think about the effects of uneven growth, I present a version of Albert Hirschmann's tunnel parable: You're in a multi-lane tunnel, all lanes in the same direction, and you're caught in a serious traffic jam. After a while, the cars in the other lane begin to move. Do you feel better or worse? At first, movement in the other lane may seem like a good sign: you hope that your turn to move will come soon, and indeed that might happen. However, if the other lane keeps whizzing by, with no gaps to enter and with no change on your lane, your reactions may well become quite negative. Unevenness without corresponding redistribution can be tolerated or even welcomed if it raises expectations everywhere, but it will be tolerated for only so long. Thus, uneven growth will set forces in motion to restore a greater degree of balance, even (in some cases) actions that may thwart the growth process itself.

### Giving Credit Where It Is Due

- Journal of Economic Perspectives---2010---Abhijit V. Banerjee,Esther Duflo

In the last few years, field experiments have emerged as an attractive new tool in the effort to elaborate our understanding of economic issues relevant to poor countries and poor people. By enabling the researcher to precisely control the variation in the data, field experiments allow the estimation of parameters and testing of hypotheses that would be very difficult to implement with observational data. The results of this body of empirical work, in turn, have pushed theory in new directions. Much of this paper illustrates the power of this interplay between experimental and theoretical thinking. Rather than discussing this in the abstract, we focus on one area where the recent empirical work has been particularly exciting and useful -- credit. Credit markets in developing countries offer up many facts and puzzles that lead us to build theories based on informational constraints and psychological limitations. The empirical work inspired by these theories, in turn, has generated both support for the theories, which then influenced policy thinking, and new puzzles, which have prompted new efforts to improve the theory. We see the substantive, two-way conversation taking place between theory and data around credit markets in developing economies as a promising template for the field.

### Microeconomic Approaches to Development: Schooling, Learning, and Growth

- Journal of Economic Perspectives---2010---Mark Rosenzweig

Within the field of economic development over the past 15 years or so, particularly significant advances have been made in what can be loosely called micro-development, an area defined principally by the units that are examined, not by a particular methodological approach. The units may be individuals, households, networks, banks, government agencies and so on, as opposed to countries. Within this area, economists use a wide variety of empirical methods informed to different degrees by economic models, they use data from developed and developing countries, and some use no data at all, to shed light on development questions. The best of this work speaks to the major questions of development and even informs, if not provides the foundation for, macro models of development and growth. I will illustrate the variety of approaches to development issues that microeconomists have employed by focusing on studies that illuminate and quantify the major mechanisms posited by growth theorists who highlight the role of education in fostering growth.

### Searching for Effective Teachers with Imperfect Information

- Journal of Economic Perspectives---2010---Doug Staiger,Jonah E. Rockoff

Over the past four decades, empirical researchers -- many of them economists -- have accumulated an impressive amount of evidence on teachers. In this paper, we ask what the existing evidence implies for how school leaders might recruit, evaluate, and retain teachers. We begin by summarizing the evidence on five key points, referring to existing work and to evidence we have accumulated from our research with the nation's two largest school districts: Los Angeles and New York City. First, teachers display considerable heterogeneity in their effects on student achievement gains. Second, estimates of teacher effectiveness based on student achievement data are noisy measures. Third, teachers' effectiveness rises rapidly in the first year or two of their teaching careers but then quickly levels out. Fourth, the primary cost of teacher turnover is not the direct cost of hiring and firing, but rather is the loss to students who will be taught by a novice teacher rather than one with several years of experience. Fifth, it is difficult to identify at the time of hire those teachers who will prove more effective. As a result, better teachers can only be identified after some evidence on their actual job performance has accumulated. We then explore what these facts imply for how principals and school districts should act, using a simple model in which schools must search for teachers using noisy signals of teacher effectiveness. The implications of our analysis are strikingly different from current practice. Rather than screening at the time of hire, the evidence on heterogeneity of teacher performance suggests a better strategy would be identifying large differences between teachers by observing the first few years of teaching performance and retaining only the highest-performing teachers.

### Aiming for Efficiency Rather Than Proficiency

- Journal of Economic Perspectives---2010---Derek Neal

The No Child Left Behind law is flawed for many reasons, but the most important is that it is built around proficiency targets. Proficiency rates are not useful metrics of school performance because universal proficiency is not a socially efficient goal for principals and teachers. Further, the variation in proficiency rates among schools reflects, in large part, interschool differences in student background characteristics. The designers of accountability systems must move away from systems designed around a one-size-fits-all standard and begin designing systems that organize and promote competition among schools. Well-organized competition among schools is the best vehicle for making sure that schools use public funds efficiently. If education officials pursue this paradigm, they must develop relative performance measures that assess the outcomes of these contests while making reasonable allowance for differences in student populations served by public schools. I will discuss a method for deriving context-specific measures of school performance. A percentile performance index tells public officials how often the students in a particular school or classroom perform better than students in other schools who began the year in similar circumstances with respect to their prior achievements, the compositions of their classmates, and their family backgrounds. This index of relative performance provides the information policymakers need to make preliminary judgments concerning when to reorganize a given school and give a new staff the opportunity to prove they can do better.

### The Quality and Distribution of Teachers under the No Child Left Behind Act

- Journal of Economic Perspectives---2010---Eric Hanushek,Steven Rivkin

The main effects of No Child Left Behind on the quality of teaching are likely to come through two provisions of the act. First, NCLB establishes benchmarks based on test score pass rates that schools must meet in order to remain in good standing and avoid sanctions. Since teachers are central to student performance, this accountability component of NCLB is likely to have direct effects on both the demand for and supply of teachers and therefore on both the composition of the stock of public school teachers and the distribution of those teachers among schools. Second, NCLB explicitly requires districts to have "highly qualified" teachers, and the enunciation and enforcement of such a standard might have an additional effect on the composition of teachers. We will discuss three avenues by which these requirements might affect the quality of teachers. First, we will argue that the requirements for "highly qualified" teachers are unlikely to have had any perceptible effect on the performance of students. Second, the combination of quality requirements and the more-stringent testing environment could make teaching appear more costly and risky as a profession and thus alter the composition of new entrants, but at least so far, we find no evidence of such effects. Finally, the accountability provisions might change the dynamics of the labor market for teachers, including decisions about hiring and job separation. While not completely understood, this channel might be quite important, especially at low-performing schools where the stress of the accountability requirements is highest. We will provide new evidence from Texas on the relationship between school accountability ratings and teacher transitions both out of schools and out of grades three through eight, the grades subject to NCLB testing requirements. Finally, we offer some observations about potential policy implications and a future research agenda.

### Teachers' Views on No Child Left Behind: Support for the Principles, Concerns about the Practices

- Journal of Economic Perspectives---2010---Richard Murnane,John P. Papay

In this article, we describe teachers' views of the behavioral responses the No Child Left Behind legislation has elicited and the extent to which research reveals evidence of these responses and their effects on the distribution of student achievement. We focus on teachers' reactions to three aspects of NCLB that are particularly relevant to them: 1) the testing requirements and the rules determining "Adequate Yearly Progress" (AYP) under NCLB; 2) the sanctions imposed on schools that fail to meet AYP; and 3) the requirement that all teachers of core academic subjects be "highly qualified" in their areas of teaching assignment. Overall, we find that teachers overwhelmingly support the principles underlying the No Child Left Behind legislation, including that schools should be held accountable for educating all children well. However, teachers are concerned that the incentives created by some provisions of the law have elicited unintended responses that reduce the quality of education provided to at least some children.

### Measurement Matters: Perspectives on Education Policy from an Economist and School Board Member

- Journal of Economic Perspectives---2010---Kevin Lang

One of the potential strengths of the No Child Left Behind (NCLB) Act enacted in 2002 is that the law requires the production of an enormous amount of data, particularly from tests, which, if used properly, might help us improve education. As an economist and as someone who served 13 years on the School Committee in Brookline Massachusetts, until May 2009, I have been appalled by the limited ability of districts to analyze these data; I have been equally appalled by the cavalier manner in which economists use test scores and related measures in their analyses. The summary data currently provided are very hard to interpret, and policymakers, who typically lack statistical sophistication, cannot easily use them to assess progress. In some domains, most notably the use of average test scores to evaluate teachers or schools, the education community is aware of the biases and has sought better measures. The economics and statistics communities have both responded to and created this demand by developing value-added measures that carry a scientific aura. However, economists have largely failed to recognize many of the problems with such measures. These problems are sufficiently important that they should preclude any automatic link between these measures and rewards or sanctions. They do, however, contain information and can be used as a catalyst for more careful evaluation of teachers and schools, and as a lever to induce principals and other administrators to act on their knowledge.

### Emmanuel Saez: 2009 John Bates Clark Medalist

- Journal of Economic Perspectives---2010---B. Douglas Bernheim

Emmanuel Saez, winner of the 2009 John Bates Clark Medal, has distinguished himself by making fundamental contributions concerning critical theoretical and empirical issues within the field of public economics. He is one of those exceptional scholars whose work reflects a broad and thoroughly integrated vision. In carefully and creatively implementing that vision, he has led a remarkable resurgence of interest in tax policy research over the last decade. Emmanuel's work can be divided into five areas: the theory of optimal taxes and transfers; the measurement of income and wealth distributions; the measurement of behavioral responses to personal taxation; the taxation of corporate dividends; and retirement saving. A great deal of his work is closely interrelated across these topics, which makes the whole considerably greater than the sum of the parts. In effect, he has bridged the chasm between theory and practical policymaking by attacking the policy design problem from both sides at once. This article provides a survey of Emmanuel's work.

### Mobile Phones and Economic Development in Africa

- Journal of Economic Perspectives---2010---Jenny C. Aker,Isaac Mbiti

Access to and use of mobile telephony in sub-Saharan Africa has increased dramatically over the past decade. Mobile telephony has brought new possibilities to the continent. Across urban-rural and rich-poor divides, mobile phones connect individuals to individuals, information, markets, and services. These effects can be particularly dramatic in rural Africa, where in many places mobile phones have represented the first modern telecommunications infrastructure of any kind. Mobile phones have greatly reduced communication costs, thereby allowing individuals and firms to send and to obtain information quickly and cheaply on a variety of economic, social, and political topics. An emerging body of research shows that the reduction in communication costs associated with mobile phones has tangible economic benefits, improving agricultural and labor market efficiency and producer and consumer welfare in specific circumstances and countries. This paper first examines the evolution of mobile phone coverage and adoption in sub-Saharan Africa over the past decade. We then explore the main channels through which mobile phones can effect economic outcomes and appraise current evidence of its potential to improve economic development. We conclude with directions for future research and outline the necessary conditions for mobile phones to promote broader economic development in Africa.

### Markets: State Franchise Laws, Dealer Terminations, and the Auto Crisis

- Journal of Economic Perspectives---2010---Francine Lafontaine,Fiona Scott Morton

In fall 2008, General Motors and Chrysler were both on the brink of bankruptcy, and Ford was not far behind. As the government stepped in and restructuring began, GM and Chrysler announced their plan to terminate about 2,200 dealerships. In this paper, we first provide an overview of franchising in car distribution, how it came about, and the legal framework within which it functions. States earn about 20 percent of all state sales taxes from auto dealers. As a result, new car dealerships, and especially local or state car dealership associations, have been able to exert influence over local legislatures. This has led to a set of state laws that almost guarantee dealership profitability and survival -- albeit at the expense of manufacturer profits. Available evidence and theory suggests that as a result of these laws, distribution costs and retail prices are higher than they otherwise would be; and this is particularly true for Detroit's Big Three car manufacturers -- which is likely a factor contributing to their losses in market share vis-á-vis other manufacturers. After discussing the evidence on the effects of the car franchise laws on dealer profit and car prices, we turn to the interaction of the franchise laws and manufacturers' response to the auto crisis. Last, we consider what car distribution might be like if there were no constraints on organization. We conclude that although the state-level franchise laws came about for a reason, the current crisis perhaps provides an opportunity to reconsider the kind of regulatory framework that would best serve consumers, rather than carmakers or car dealers.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2010---Timothy Taylor

### The Credibility Revolution in Empirical Economics: How Better Research Design Is Taking the Con out of Econometrics

- Journal of Economic Perspectives---2010---Joshua Angrist,Jorn-Steffen Pischke

Since Edward Leamer's memorable 1983 paper, "Let's Take the Con out of Econometrics," empirical microeconomics has experienced a credibility revolution. While Leamer's suggested remedy, sensitivity analysis, has played a role in this, we argue that the primary engine driving improvement has been a focus on the quality of empirical research designs. The advantages of a good research design are perhaps most easily apparent in research using random assignment. We begin with an overview of Leamer's 1983 critique and his proposed remedies. We then turn to the key factors we see contributing to improved empirical work, including the availability of more and better data, along with advances in theoretical econometric understanding, but especially the fact that research design has moved front and center in much of empirical micro. We offer a brief digression into macroeconomics and industrial organization, where progress -- by our lights -- is less dramatic, although there is work in both fields that we find encouraging. Finally, we discuss the view that the design pendulum has swung too far. Critics of design-driven studies argue that in pursuit of clean and credible research designs, researchers seek good answers instead of good questions. We briefly respond to this concern, which worries us little.

### Tantalus on the Road to Asymptopia

- Journal of Economic Perspectives---2010---Edward Leamer

My first reaction to "The Credibility Revolution in Empirical Economics," authored by Joshua D. Angrist and Jörn-Steffen Pischke, was: Wow! This paper makes a stunningly good case for relying on purposefully randomized or accidentally randomized experiments to relieve the doubts that afflict inferences from nonexperimental data. On further reflection, I realized that I may have been overcome with irrational exuberance. Moreover, with this great honor bestowed on my "con" article, I couldn't easily throw this child of mine overboard. As Angrist and Pischke persuasively argue, either purposefully randomized experiments or accidentally randomized "natural" experiments can be extremely helpful, but Angrist and Pischke seem to me to overstate the potential benefits of the approach. I begin with some thoughts about the inevitable limits of randomization, and the need for sensitivity analysis in this area, as in all areas of applied empirical work. I argue that the recent financial catastrophe is a powerful illustration of the fact that extrapolating from natural experiments will inevitably be hazardous. I discuss how the difficulties of applied econometric work cannot be evaded with econometric innovations, offering as examples some under-recognized difficulties with instrumental variables and robust standard errors. I conclude with comments about the shortcomings of an experimentalist paradigm as applied to macroeconomics, and some warnings about the willingness of applied economists to apply push-button methodologies without sufficient hard thought regarding their applicability and shortcomings.

### A Structural Perspective on the Experimentalist School

- Journal of Economic Perspectives---2010---Michael Keane

What has always bothered me about the "experimentalist" school is the false sense of certainty it conveys. My view, like Leamer's, is that there is no way to escape the role of assumptions in statistical work, so our conclusions will always be contingent. Hence, we should be circumspect about our degree of knowledge. I present some lessons for economics from the field of marketing, a field where broad consensus has been reached on many key issues over the past twenty years. In marketing, 1) the structural paradigm is dominant, 2) the data are a lot better than in some fields of economics, and 3) there is great emphasis on external validation. Of course, good data always helps. I emphasize that the ability to do controlled experiments does not obviate the need for theory, and finally I address different approaches to model validation.

### But Economics Is Not an Experimental Science

- Journal of Economic Perspectives---2010---Christopher Sims

The fact is, economics is not an experimental science and cannot be. "Natural" experiments and "quasi" experiments are not in fact experiments. They are rhetorical devices that are often invoked to avoid having to confront real econometric difficulties. Natural, quasi-, and computational experiments, as well as regression discontinuity design, can all, when well applied, be useful, but none are panaceas. The essay by Angrist and Pischke, in its enthusiasm for some real accomplishments in certain subfields of economics, makes overbroad claims for its favored methodologies. What the essay says about macroeconomics is mainly nonsense. Consequently, I devote the central part of my comment to describing the main developments that have helped take some of the con out of macroeconomics. Recent enthusiasm for single-equation, linear, instrumental variables approaches in applied microeconomics has led many in these fields to avoid undertaking research that would require them to think formally and carefully about the central issues of nonexperimental inference -- what I see and many see as the core of econometrics. Providing empirically grounded policy advice necessarily involves confronting these difficult central issues.

### Taking the Dogma out of Econometrics: Structural Modeling and Credible Inference

- Journal of Economic Perspectives---2010---Aviv Nevo,Michael Whinston

Without a doubt, there has been a "credibility revolution" in applied econometrics. One contributing development has been in the improvement and increased use in data analysis of "structural methods"; that is, the use of models based in economic theory. Structural modeling attempts to use data to identify the parameters of an underlying economic model, based on models of individual choice or aggregate relations derived from them. Structural estimation has a long tradition in economics, but better and larger data sets, more powerful computers, improved modeling methods, faster computational techniques, and new econometric methods such as those mentioned above have allowed researchers to make significant improvements. While Angrist and Pischke extol the successes of empirical work that estimates "treatment effects" based on actual or quasi-experiments, they are much less sanguine about structural analysis and hold industrial organization up as an example where "progress is less dramatic." Indeed, reading their article one comes away with the impression that there is only a single way to conduct credible empirical analysis. This seems to us a very narrow and dogmatic approach to empirical work; credible analysis can come in many guises, both structural and nonstructural, and for some questions structural analysis offers important advantages. In this comment, we address the criticism of structural analysis and its use in industrial organization, and consider why empirical analysis in industrial organization differs in such striking ways from that in fields such as labor, which have recently emphasized the methods favored by Angrist and Pischke.

### The Other Transformation in Econometric Practice: Robust Tools for Inference

- Journal of Economic Perspectives---2010---James H. Stock

Angrist and Pischke highlight one aspect of the research that has positively transformed econometric practice and teaching. They emphasize the rise of experiments and quasi-experiments as credible sources of identification in microeconometric studies, which they usefully term "design-based research." But in so doing, they miss an important part of the story: a second research strand aimed at developing tools for inference that are robust to subsidiary modeling assumptions. My first aim in these remarks therefore is to highlight some key developments in this area. I then turn to Angrist and Pischke's call for adopting experiments and quasi-experiments in macroeconometrics; while sympathetic, I suspect the scope for such studies is limited. I conclude with some observations on the current debate about whether experimental methods have gone too far in abandoning economic theory.

### Geographic Variation in the Gender Differences in Test Scores

- Journal of Economic Perspectives---2010---Devin G. Pope,Justin R. Sydnor

The causes and consequences of gender disparities in standardized test scores -- especially in the high tails of achievement -- have been a topic of heated debate. The existing evidence on standardized test scores largely confirms the prevailing stereotypes that more men than women excel in math and science while more women than men excel in tests of language and reading. We provide a new perspective on this gender gap in test scores by analyzing the variation in these disparities across geographic areas. We illustrate that male-female ratios of students scoring in the high ranges of standardized tests vary significantly across the United States. This variation is systematic in several important ways. In particular, states where males are highly overrepresented in the top math and science scores also tend to be states where women are highly overrepresented in the top reading scores. This pattern suggests that states vary in their adherence to stereotypical gender performance, rather than favoring one sex over the other across all subjects. Furthermore, since the genetic distinction and the hormonal differences between sexes that might affect early cognitive development (that is, innate abilities) are likely the same regardless of the state in which a person happens to be born, the variation we find speaks to the nature-versus-nurture debates surrounding test scores and suggests environments significantly impact gender disparities in test scores.

### The Gender Gap in Secondary School Mathematics at High Achievement Levels: Evidence from the American Mathematics Competitions

- Journal of Economic Perspectives---2010---Glenn Ellison,Ashley Swanson

This paper uses a new data source, American Mathematics Competitions, to examine the gender gap among high school students at very high achievement levels. The data bring out several new facts. There is a large gender gap that widens dramatically at percentiles above those that can be examined using standard data sources. An analysis of unobserved heterogeneity indicates that there is only moderate variation in the gender gap across schools. The highest achieving girls in the U.S. are concentrated in a very small set of elite schools, suggesting that almost all girls with the ability to reach high math achievement levels are not doing so.

### Explaining the Gender Gap in Math Test Scores: The Role of Competition

- Journal of Economic Perspectives---2010---Muriel Niederle,Lise Vesterlund

The mean and standard deviation in performance on math test scores are only slightly larger for males than for females. Despite minor differences in mean performance, many more boys than girls perform at the right tail of the distribution. This gender gap has been documented for a series of math tests including the AP calculus test, the mathematics SAT, and the quantitative portion of the Graduate Record Exam (GRE). The objective of this paper is not to discuss whether the mathematical skills of males and females differ, be it a result of nurture or nature. Rather we argue that the reported test scores do not necessarily match the gender differences in math skills. We will present results that suggest that the evidence of a large gender gap in mathematics performance at high percentiles in part may be explained by the differential manner in which men and women respond to competitive test-taking environments. The effects in mixed-sex settings range from women failing to perform well in competitions, to women shying away from environments in which they have to compete. We find that the response to competition differs for men and women, and in the examined environment, gender difference in competitive performance does not reflect the difference in noncompetitive performance. We argue that the competitive pressures associated with test taking may result in performances that do not reflect those of less-competitive settings. Of particular concern is that the distortion is likely to vary by gender and that it may cause gender differences in performance to be particularly large in mathematics and for the right tail of the performance distribution. Thus the gender gap in math test scores may exaggerate the math advantage of males over females.

### Empirical Industrial Organization: A Progress Report

- Journal of Economic Perspectives---2010---Liran Einav,Jonathan Levin

The field of industrial organization has made dramatic advances over the last few decades in developing empirical methods for analyzing imperfect competition and the organization of markets. These new methods have diffused widely: into merger reviews and antitrust litigation, regulatory decision making, price setting by retailers, the design of auctions and marketplaces, and into neighboring fields in economics, marketing, and engineering. Increasing access to firm-level data and in some cases the ability to cooperate with firms or governments in experimental research designs is offering new settings and opportunities to apply these ideas in empirical work. This essay begins with a sketch of how the field has evolved to its current state, in particular how the field's emphasis has shifted over time from attempts to relate aggregate measures across industries toward more focused studies of individual industries. The second and primary part of the essay describes several active areas of inquiry. We also discuss some of the impacts of this research and specify topics where research efforts have been more or less successful. The last section steps back to offer a broader perspective. We address some current debates about research emphasis in the field, and more broadly about empirical methods, and offer some thoughts on where future research might go.

### The Columbian Exchange: A History of Disease, Food, and Ideas

- Journal of Economic Perspectives---2010---Nathan Nunn,Nancy Qian

This paper provides an overview of the long-term impacts of the Columbian Exchange -- that is, the exchange of diseases, ideas, food crops, technologies, populations, and cultures between the New World and the Old World after Christopher Columbus' voyage to the Americas in 1492. We focus on the aspects of the exchange that have been most neglected by economic studies; namely the transfer of diseases, food crops, and knowledge between the two Worlds. We pay particular attention to the effects of the exchange on the Old World.

### Corporate Audits and How to Fix Them

- Journal of Economic Perspectives---2010---Joshua Ronen

Auditors are supposed to be watchdogs, but in the last decade or so, they sometimes looked like lapdogs -- more interested in serving the companies they audited than in assuring a flow of accurate information to investors. The auditing profession is based on what looks like a structural infirmity: auditors are paid by the companies they audit. An old German proverb holds: "Whose bread I eat, his song I sing." While this saying was originally meant as a prayer of thanksgiving, the old proverb takes on a darker meaning for those who study the auditing profession. This paper begins with an overview of the practice of audits, the auditing profession, and the problems that auditors continue to face in terms not only of providing audits of high quality, but also in providing audits that investors feel comfortable trusting to be of high quality. It then turns to a number of reforms that have been proposed, including ways of building reputation, liability reform, capitalizing or insuring auditing firms, and greater competition in the auditing profession. However, none of these suggested reforms, individually or collectively, severs the agency relation between the client management and the auditors. As a result, the conflict of interest, although it can be mitigated by some of these reforms, continues to threaten auditors' independence, both real and perceived. In conclusion, I'll discuss my own proposal for financial statements insurance, which would redefine the relationship between auditors and firms in such a way that auditors would no longer be beholden to management.

### Markets: The Credit Rating Agencies

- Journal of Economic Perspectives---2010---Lawrence White

This paper will explore how the financial regulatory structure propelled three credit rating agencies -- Moody's, Standard & Poor's (S&P), and Fitch -- to the center of the U.S. bond markets -- and thereby virtually guaranteed that when these rating agencies did make mistakes, these mistakes would have serious consequences for the financial sector. We begin by looking at some relevant history of the industry, including the series of events that led financial regulators to outsource their judgments to the credit rating agencies (by requiring financial institutions to use the specific bond creditworthiness information that was provided by the major rating agencies) and when the credit rating agencies shifted their business model from "investor pays" to "issuer pays." We then look at how the credit rating industry evolved and how its interaction with regulatory authorities served as a barrier to entry. We then show how these ingredients combined to contribute to the subprime mortgage debacle and associated financial crisis. Finally, we consider two possible routes for public policy with respect to the credit rating industry: One route would tighten the regulation of the rating agencies, while the other route would reduce the required centrality of the rating agencies and thereby open up the bond information process in a way that has not been possible since the 1930s.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2010---Timothy Taylor

### How Debt Markets Have Malfunctioned in the Crisis

- Journal of Economic Perspectives---2010---Arvind Krishnamurthy

The financial crisis that began in 2007 is especially a crisis in debt markets. A full understanding of what happened in the financial crisis requires investigation into the plumbing of debt markets. During a financial crisis, when funds often cannot be raised easily or quickly, the fundamental values for certain assets can become separated for a time from market prices, with consequences that can echo into the real economy. This article will explain in concrete ways how debt markets can malfunction, with deleterious consequences for the real economy. After a quick overview of debt markets, I discuss three areas that are crucial in all debt markets decisions: risk capital and risk aversion; repo financing and haircuts; and counterparty risk. In each of these areas, feedback effects can arise so that less liquidity and a higher cost for finance can reinforce each other in a contagious spiral. I will document the remarkable rise in the premium that investors placed on liquidity during the crisis. Next, I will show how these issues caused debt markets to break down; indeed, fundamental values and market values seemed to diverge across several markets and products that were far removed from the "toxic" subprime mortgage assets at the root of the crisis. Finally, I will discuss briefly four steps that the Federal Reserve took to ease the crisis and how each was geared to a specific systemic fault that arose during the crisis.

### When Safe Proved Risky: Commercial Paper during the Financial Crisis of 2007-2009

- Journal of Economic Perspectives---2010---Marcin Kacperczyk,Philipp Schnabl

Commercial paper is a short-term debt instrument issued by large corporations. The commercial paper market has long been viewed as a bastion of high liquidity and low risk. But twice during the financial crisis of 2007-2009, the commercial paper market nearly dried up and ceased being perceived as a safe haven. Major interventions by the Federal Reserve, including large outright purchases of commercial paper, were eventually used to support both issuers of and investors in commercial paper. We will offer an analysis of the commercial paper market during the financial crisis. First, we describe the institutional background of the commercial paper market. Second, we analyze the supply and demand sides of the market. Third, we examine the most important developments during the crisis of 2007-2009. Last, we discuss three explanations of the decline in the commercial paper market: substitution to alternative sources of financing by commercial paper issuers, adverse selection, and institutional constraints among money market funds.

### The Failure Mechanics of Dealer Banks

- Journal of Economic Perspectives---2010---Darrell Duffie

During the recent financial crisis, major dealer banks -- that is, banks that intermediate markets for securities and derivatives -- suffered from new forms of bank runs. The most vivid examples are the 2008 failures of Bear Stearns and Lehman Brothers. Dealer banks are often parts of large complex financial organizations whose failures can damage the economy significantly. As a result, they are sometimes considered "too big to fail." The mechanics by which dealer banks can fail and the policies available to treat the systemic risk of their failures differ markedly from the case of conventional commercial bank runs. These failure mechanics are the focus of this article. This is not a review of the financial crisis of 2007-2009. Systemic risk is considered only in passing. Both the financial crisis and the systemic importance of large dealer banks are nevertheless obvious and important motivations.

### Credit Default Swaps and the Credit Crisis

- Journal of Economic Perspectives---2010---René Stulz

Many observers have argued that credit default swaps contributed significantly to the credit crisis. Of particular concern to these observers are that credit default swaps trade in the largely unregulated over-the-counter market as bilateral contracts involving counterparty risk and that they facilitate speculation involving negative views of a firm's financial strength. Some observers have suggested that credit default swaps would not have made the crisis worse had they traded on exchanges. I conclude that credit default swaps did not cause the dramatic events of the credit crisis, that the over-the-counter credit default swaps market worked well during much of the crisis, and that exchange trading has both advantages and costs compared to over-the-counter trading. Though I argue that eliminating over-the-counter trading of credit default swaps could reduce social welfare, I also recognize that much research is needed to understand better and to quantify the social gains and costs of derivatives in general and credit default swaps in particular.

### Did Fair-Value Accounting Contribute to the Financial Crisis?

- Journal of Economic Perspectives---2010---Christian Laux,Christian Leuz

The recent financial crisis has led to a major debate about fair-value accounting. Many critics have argued that fair-value accounting, often also called mark-to-market accounting, has significantly contributed to the financial crisis or, at least, exacerbated its severity. In this paper, we assess these arguments and examine the role of fair-value accounting in the financial crisis using descriptive data and empirical evidence. Based on our analysis, it is unlikely that fair-value accounting added to the severity of the 2008 financial crisis in a major way. While there may have been downward spirals or asset-fire sales in certain markets, we find little evidence that these effects are the result of fair-value accounting. We also find little support for claims that fair-value accounting leads to excessive write-downs of banks' assets. If anything, empirical evidence to date points in the opposite direction, that is, toward the overvaluation of bank assets during the crisis.

### Mental Retirement

- Journal of Economic Perspectives---2010---Susann Rohwedder,Robert Willis

Early retirement appears to have a significant negative impact on the cognitive ability of people in their early 60s that is both quantitatively important and causal. We obtain this finding using cross-nationally comparable survey data from the United States, England, and Europe that allow us to relate cognition and labor force status. We argue that the effect is causal by making use of a substantial body of research showing that variation in pension, tax, and disability policies explain most variation across countries in average retirement rates. (In an informal manner, we are arguing that public policies that affect the age of retirement may be used as instrumental variables to generate cross-country variation in retirement behavior in order to identify the causal effect of retirement on cognition.)

### How Longer Work Lives Ease the Crunch of Population Aging

- Journal of Economic Perspectives---2010---Nicole Maestas,Julie Zissimopoulos

Population aging is not a looming crisis of the future -- it is already here. Economic challenges arise when the increase in people surviving to old age and the decline in the number of young people alive to support them cause the growth in society's consumption needs to outpace growth in its productive capacity. The ultimate impact of population aging on our standard of living in the future depends a great deal on how long people choose to work before they retire from the labor force. Here, there is reason for optimism. A constellation of forces, some just now gaining momentum, has raised labor force participation at older ages at just the time it is needed. We examine the most important factors behind the increase in labor force participation realized to date: the shift in the skill composition of the workforce, and technological change. We argue that forces such as changes in the structure of employer-provided pensions and Social Security are likely to propel future increases in labor force participation at older ages. The labor market is accommodating older workers to some degree, and older men and women are themselves adapting on a number of fronts, which could substantially lessen the economic impact of population aging. Age-related health declines and the reluctance of employers to hire and retain older workers present challenges, but the outlook for future gains in labor force participation at older ages is promising.

### What the Stock Market Decline Means for the Financial Security and Retirement Choices of the Near-Retirement Population

- Journal of Economic Perspectives---2010---Alan Gustman,Thomas L. Steinmeier,Nahid Tabatabai

This paper investigates the effect of the current recession on the retirement age population. Data from the Health and Retirement Study suggest that those approaching retirement age (early boomers ages 53 to 58 in 2006) have only 15.2 percent of their wealth in stocks, held directly or in defined contribution plans or IRAs. Their vulnerability to a stock market decline is limited by the high value of their Social Security wealth, which represents over a quarter of the total household wealth of the early boomers. In addition, their defined contribution plans remain immature, so their defined benefit plans represent sixty five percent of their pension wealth. Simulations with a structural retirement model suggest the stock market decline will lead the early boomers to postpone their retirement by only 1.5 months on average. Health and Retirement Study data also show that those approaching retirement are not likely to be greatly or immediately affected by the decline in housing prices. We end with a discussion of important difficulties facing those who would use labor market policies to increase the employment of older workers.

### Economic Theory and the World of Practice: A Celebration of the ( S, s ) Model

- Journal of Economic Perspectives---2010---Andrew Caplin,John Leahy

It was the question of how best to balance the costs of ordering and of running out of stock against the costs of holding excess inventory that inspired Kenneth Arrow, Theodore Harris, and Jacob Marschak to introduce the ( S , s ) model in 1951. In this celebratory article, we show how this model not only answered important practical questions, but also opened the door to a quite startling range of important and challenging follow-up questions, many of great practical importance and analytic depth. The ( S , s ) model has become one of the touchstone models of economics, opening new vistas of applied economic theory to all who internalize its structure. Today it is universally applied to solve questions faced in inventory control. The core model elements, uncertainty and fixed costs of adjustment, are ubiquitous, which has resulted in its becoming the general purpose economic model of discrete adjustment. The ( S , s ) model has also become a profound source of inspiration for macroeconomists seeking to understand the role that discrete microeconomic adjustments play in macroeconomic fluctuations. Looking forward, we foresee rapid growth in the use of ( S , s ) modeling to aid households making complex and costly financial decisions, such as when and how to terminate a mortgage. In the projected era of "household operations research," new modeling challenges will arise due to enriched feedback from the world of practice.

### Why Do Management Practices Differ across Firms and Countries?

- Journal of Economic Perspectives---2010---Nicholas Bloom,John van Reenen

Economists have long puzzled over the astounding differences in productivity between firms and countries. In this paper, we present evidence on a possible explanation for persistent differences in productivity at the firm and the national level -- namely, that such differences largely reflect variations in management practices. We have, over the last decade, undertaken a large survey research program to systematically measure management practices across firms, industries, and countries. Our survey approach focuses on aspects of management like systematic performance monitoring, setting appropriate targets, and providing incentives for good performance. We explain how we measure management; identify some basic patterns in our data; then turn to the question of why management practices vary so much across firms and nations. What we find is a combination of imperfectly competitive markets, family ownership of firms, regulations restricting management practices, and informational barriers allow bad management to persist.

### Retrospectives: Engel Curves

- Journal of Economic Perspectives---2010---Andreas Chai,Alessio Moneta

Engel curves describe how household expenditure on particular goods or services depends on household income. German statistician Ernst Engel (1821-1896) was the first to investigate this relationship systematically in an article published about 150 years ago. The best-known single result from the article is "Engel's law," which states that the poorer a family is, the larger the budget share it spends on nourishment. We revisit Engel's article, including its context and the mechanics of the argument. Because the article was completed a few decades before linear regression techniques were established and income effects were incorporated into standard consumer theory, Engel was forced to develop his own approach to analyzing household expenditure patterns. We find his work contains some interesting features in juxtaposition to both the modern and classical literature. For example, Engel's way of estimating the expenditure-income relationship resembles a data-fitting technique called the "regressogram" that is nonparametric -- in that no functional form is specified before the estimation. Moreover, Engel introduced a way of categorizing household expenditures in which expenditures on commodities that served the same purpose by satisfying the same underlying "want" were grouped together. This procedure enabled Engel to discuss the welfare implications of his results in terms of the Smithian notion that individual welfare is related to the satisfaction of wants. At the same time, he avoided making a priori assumptions about which specific goods were necessities, assumptions which were made by many classical economists like Adam Smith.

Finally, we offer a few thoughts about some modern literature that builds on Engel's research.

### Recommendations for Further Reading

- Journal of Economic Perspectives---2010---Timothy Taylor