The Program for Economic Research (PER) continues to expand its role within the university as a major force in bringing prominent researchers to Columbia and fostering research and teaching. This can be seen by dramatic expansions in our programmatic activities as well as PER’s ability to leverage the talent of our faculty to help them to succeed in winning more grants and research funding. Our research portfolio now includes sponsored projects totaling over 7 million dollars. This is a major, positive change for the department, which had virtually no grant support prior to PER’s founding.

Moreover, our Economics Advisory Council has taken a major leadership role in helping us to reach out to more Columbia alumni and friends and dramatically expand our support for economics at the university. This is a major, positive change for the department, which had virtually no grant support prior to PER’s founding.

continued on page 3

NEWS FROM THE GRADUATE PROGRAM

Ama Baafra Abeberese and Todd J. Kumler, with Leigh L. Linden, recently published an NBER Working Paper entitled “Improving Reading Skills by Encouraging Children to Read: A Randomized Evaluation of the Sa Aklat Siyikat Reading Program in the Philippines” (#17185). The paper looks at the impact of a 31-day read-a-thon on the students’ propensity to read and their scores on a reading assessment, and finds that the positive impact persists.

Jonathan Dingel (left) and Hyunseung Oh (right) won the Vickrey Prize for best third-year papers. Jonathan’s paper “Consumer cities in general equilibrium” introduces a model in which the cross-city allocation of heterogeneous workers and cross-city pattern of consumption opportunities are jointly determined in spatial equilibrium. In contrast to the prior literature’s partial-equilibrium prediction that higher-income consumers will experience a wage discount in larger cities with better consumption opportunities, it demonstrates that differences in consumption opportunities can explain why average wages are higher in larger cities. Hyunseung Oh’s paper is entitled “Durables replacement and market power in a new Keynesian model.” By allowing households to resell and repurchase their durables through a secondary market, the model generates time-varying markups within the durables sector. The model predicts that durability deteriorates market power and that procyclical replacements generate countercyclical markups. The model resolves the co-movement puzzle of durables and nondurables with regards to a monetary policy shock.

Ilton Soares’s paper “Returns to Skills and the College Premium”, with Flavio Cunha and Fatih Karahan, was published in the August 2011 issue of the Journal of Money, Credit and Banking. The paper looks at the evolution of the college premium in the U.S. labor market over the last 40 years.
Columbia Economics made great strides forward in the past eight years. It is a remarkable story of regeneration still incomplete.

The university in 2003 embarked on an ambitious plan to rebuild the department and restore its reputation for excellence. Just eight years earlier, Columbia Economics was ranked twelfth among graduate economic programs in the United States, but it fell to fourteenth place in 1998, where it remained through 2001. This was the nadir of a long decline. Columbia arguably ranked among the top five economics departments in the country as late as the 1960s, and continued to hire outstanding faculty into the 1980s, but the department drifted, and by the 1990s faculty size had shrunken by a third from a decade earlier. The department approached the end of the century in sad shape.

A concerted effort was made to restore the size of the faculty in the late 1990s. Kyle Bagwell and Xavier Sala-i-Martin arrived in 1996. Richard Clarida became chair in 1997, and recruited Don Davis, David Weinstein and me. Lena Edlund, now tenured, joined the faculty as an assistant professor that year. The department gained cachet when Robert Mundell won the Nobel Prize in 1999, and again when Joseph Stiglitz won in 2001 just after joining Columbia. Meanwhile, Economics had become increasingly important in the university’s curriculum, as women undergraduates entered the major in large numbers and the share of Columbia College students majoring in Economics roughly doubled. The faculty remained too small to keep up with the growing curriculum needs.

This growth in demand for Economics courses created an opportunity to rebuild the department by growing faculty size along with student size. That was the plan. Don Davis stepped up to become department chair in 2001, and, over the next two years, negotiated with Vice President of Arts and Sciences David Cohen a plan to increase regular faculty size by at least 25%, with an additional five visiting professorships. The plan gained the approval of Provost Jonathan Cole and incoming President Lee Bollinger. It became known as the Economics Initiative.

The Economics Initiative got off to a promising start. Macroeconomist Michael Woodford arrived in 2004. Microeconomists Patrick Bolton, Yeon-Koo Che, Pierre-Andre Chiappori, and Bernard Salanié joined the next year. So did econometrician Ed Vytlacil. Suddenly, the department had impressive new strength in the core fields, but, perhaps even importantly, finally had a critical mass of younger senior faculty committed to restoring the department to the top ranks. During this period, the department also appointed a remarkable group of assistant professors, many of whom are now tenured or coming up for tenure; these include Stefania Albanesi, Douglas Almond, Katherine Ho, Wojciech Kopczuk, Christian Pop-Eleches, Miguel Urquiola, Wolfram Schlenker, Till von Wachter, and Eric Verhoogen. The Economics Initiative was working. By 2005, Columbia Economics had climbed to eleventh place.

The breakthrough came in 2008 when five newly recruited full professors joined the department. Jushan Bai and Marcelo Moreira joined the econometrics group, while Stephanie Schmitt-Grohé, Ricardo Reis and Martin Uribe bolstered macroeconomics. The department...
also recruited rising microeconomic theorist Navin Kartik, whom it soon promoted to tenure, and lured macroeconomists Emi Nakamura, Jaromir Nosal and Jón Steinsson, as well as international economist Jon Vogel, to the junior faculty. The Economics Initiative was paying off. By 2008 the department re-entered the top ten.

Just after I became department chair in 2009, the financial crisis hit. This put the brakes on the Economics Initiative. The department was able to do a limited amount of junior recruiting in the next two years, hiring Chris Conlon in industrial organization, Qingmin Liu in microeconomic theory, and Eduardo Morales in international economics. Meanwhile, the department lost two of its most prominent researchers, as Bagwell departed for Stanford and Currie for Princeton. Those losses will be hard to replace, but as Columbia recovers from the financial crises, the department is engaging in a normal recruitment cycle, similar to other top ten departments, with a focus on junior recruiting and selective target-of-opportunity senior recruiting.

Over the next few years, Columbia Economics expects to complete the ambitious plan of the Economics Initiative, by moving to its target faculty size, and also by fundraising for endowed visiting professorships. If the department can attract top economists to visit Columbia, spending a pleasant year in New York City on leave from their home institutions, some may stay. Setting its sights on top five status, the department must compete with higher ranked peers for the very best academic talent. Columbia’s NYC location is an advantage, and visiting professorships can leverage that advantage.

Along the way, Columbia Economics is fortunate to be supported by an engaged group of leadership alumni who compose our Economics Advisory Council. EAC support is part of the department’s ongoing success story. For example, it helps fund the Program for Economic Research, the research arm of the department. PER’s investment in high performance computing is critical for recruiting and retaining the best empirical economists, as well as for training graduate students. PER’s excellent grants administration staff and seed grant program equally help recruit and retain a world-class research faculty and supports student research.

Going forward, Columbia Economics seeks to broaden it relationships with alumni. I encourage you to visit the Columbia Economics website at http://econ.columbia.edu/ and read about our research, teaching, and public events. You can access the newsletter archive to learn more about the department’s story of regeneration. The site announces upcoming public events sponsored by PER, and will keep you up to date on the many accomplishments of the Economics faculty and students. Please be a little patient with the site. Like the department itself, it is newly constructed, still needs some finishing, and awaits some new elements.

Yours truly,

Michael H. Riordan
POOR ECONOMICS: A RADICAL RETHINKING OF THE WAY TO FIGHT GLOBAL POVERTY

On September 14, 2011, Esther Duflo and Abhijit Banerjee of MIT discussed their latest book, Poor Economics, with a discussion by Columbia professor and director of the Earth Institute Jeffrey Sachs. Their book, written for an audience of policy makers, philanthropists, and activists, argues that much of anti-poverty policy has failed over the years because of an inadequate understanding of poverty.
FOURTH ANNUAL KENNETH J. ARROW LECTURE

The Fourth Annual Kenneth J. Arrow lecture was held on April 12, 2011, entitled “Persons and Time in the Welfare Economics of Climate Change” and delivered by Sir Partha Dasgupta, the Frank Ramsey Professor of Economics and past chairman of the faculty of economics and politics at the University of Cambridge. Sir Dasgupta’s lecture focused on the weakness in customary formulations of the idea of intergenerational well-being, and the resulting literature on the economics of climate change. His lecture was followed by remarks from Kenneth Arrow, Professor Emeritus of Economics at Stanford University; Scott Barrett, Lenfest-Earth Institute Professor of Natural Resource Economics, Columbia University; Geoffrey Heal, Paul Garrett Professor of Public Policy and Business Responsibility at Columbia Business School; and University Professor Joseph Stiglitz. The annual Arrow Lecture is co-sponsored with the Committee on Global Thought and Columbia University Press.
THE ESCALATING EUROPEAN DEBT PROBLEM: IS THERE A WAY OUT?

The Program for Economic Research hosted a panel on September 21, 2011 in midtown for Columbia alumni entitled “The Escalating European Debt Problem: Is There a Way Out?” The panel included Professors Richard Clarida and Ricardo Reis from the Department of Economics and Charles Calomiris, Henry Kaufman Professor of Financial Institutions at Columbia Business School. The faculty presented their perspectives on the current situation in European finance and answered questions from the audience. Video of the presentation is available at: http://econ.columbia.edu/per
The first part of this project will extend results obtained on non-parametric identification of continuous and discrete choice models using partial differential equations, and provide an application to decision under uncertainty by heterogeneous agents. We shall consider the issue of non-parametric identification from a general, theoretical perspective, a particular emphasis being put on contexts in which identification conditions generate systems of (at least two) first order PDEs in one unknown function - a structure common in several economic models, including 'collective' models of household behavior. These theoretical ideas can then be applied to specific questions, regarding in particular non-parametric identification of discrete choice models. Particularly, we plan to analyze models of (multiple) discrete choice with heterogeneous agents and unobserved product characteristics, frequently used in the empirical IO literature (the so-called 'BLP' models). These theoretical tools will then be applied to specific issues involving decision under uncertainty. While decision theory has made dramatic progresses in the last decades, many (if not most) empirical studies still refer to a standard framework that relies on expected utility, true probabilities and a representative consumer. Our goal is to test and non-parametrically estimate empirical models of decisions under uncertainty involving non-expected utility, probability deformation (or 'risk perception') and unobservable heterogeneity.

The second part is devoted to matching theory. Again, it will include theoretical and empirical work. On the theory front, we plan to analyze several extensions of standard matching theory, including multidimensional matching, matching without transferable utility, matching within a unique population (the so-called 'roommates problem'), dynamics of matching and others. On the empirical front, we shall first carefully reconsider issues linked to the empirical estimation of matching models; in particular, how can a (reasonable) stochastic structure be introduced within a matching model. We then plan to apply these models to empirical issues, with a particular emphasis on two topics: risk sharing and matching on the marriage market.

While some outcomes of the project will be fairly technical, the stakes are clearly general. The first part is ultimately aimed at improving our understanding of decision-making under uncertainty. Modern decision theory has emphasized several patterns that had been previously neglected. One is the importance of risk perception (which, formally, translates into what is often called probability deformation). Standard theory used to assume a fully transparent perception process - i.e., people simply use 'true' probabilities, at least when they are known. In reality, matters are much more complex, and risk assessment is a sophisticated and (partly or largely) subjective operation that may reflect the decision-maker's idiosyncrasies. While the corresponding theory is by now well developed, empirical analysis of these issues has largely concentrated on laboratory experiments. Our goal is to go beyond experiments, which unavoidably come with their limitations (selected populations, small stakes, experimental conditions ...), and try to apply these notions to 'real life' situations. The first requirement to achieve this goal is a serious reconsideration of empirical methods, which we plan to undertake in the coming years.
Michael Woodford – Robustness of Policy Analysis to Departures from Model-Consistent Expectations (Institute for New Economic Thinking)

This project seeks to illustrate practical difficulties that can arise from injudicious use of the conventional method of perfect foresight (or RE) policy analysis, in the context of a policy debate that has recently arisen within the Federal Reserve System. Since December 2008, the federal funds rate has remained nearly constant at an unprecedentedly low level. (The FOMC’s official target has been a band between zero and 25 basis points.) Each successive meeting of the FOMC in this period has concluded with the statement assuring the public that the funds rate is expected to remain at this low level for “an extended period”. However, the question of how long the rate should remain so low, and whether it is desirable to continue signaling that it will remain low, is much disputed within the Committee, with at least a few members clearly nervous about maintaining such an atypical policy stance for too long, even if unemployment remains high.

The project will seek to reconstruct Federal Reserve officials’ reasoning, and show that it is indeed an implication of standard models of the relationship between interest rates and inflation dynamics, if one analyzes the consequences of a contemplated policy change by assuming that the outcome must be a perfect foresight equilibrium consistent with the announced policy. It is indeed true that many plausible models imply that the only kind of equilibrium in which nominal interest rates can be forever low is one in which prices are falling. But it does not follow that a belief that the Fed intends to keep nominal interest rates low implies that one should expect deflation, except under the postulate that the economy must be in a perfect foresight equilibrium consistent with that intended interest-rate path. The project will argue that more plausible forecasts would assume instead either (i) that the Fed will not be expected to maintain low interest rates indefinitely, even if it only talks about the fact that interest-rate increases are not yet envisioned, or (ii) that the outcome of the policy will be inflation dynamics under which people’s expectations are not fulfilled (contrary to the postulate of perfect foresight).

The perspective suggested here will be one in which it is only possible to describe how a set of possible outcomes is expected to be different under alternative policies. Here will be a comparison of alternative ways of seeking to define such a set, in the context of this specific policy problem.

David E. Weinstein – Internet Prices and Price Indexes (Google Research Award)

The vast amount of price and click-through data available on Google Product Search has the potential to dramatically improve our understanding of aggregate pricing and also provide new ways to measure the quality of goods online. One of the challenges of measuring aggregate prices is how to deal with vast number of new and disappearing goods that arise as producers retire old products and replace them with new and improved ones. In Broda and Weinstein (2010), we showed how one can calculate such an aggregate price index using only price and quantity data. One of the limitations of this approach was that the AC Nielsen data used in that study covered only a limited set of products and was only available at a quarterly frequency. In this proposal, we aim to go beyond the original Broda and Weinstein (2010) and Feenstra and Weinstein (2010) papers in a number of dimensions. First, we aim to use daily price and click-through information to develop variety-adjusted daily price indexes that will be superior to those used by Bureau of Labor Statistics (BLS). Second, we will develop methods of measuring “revealed quality” of products on Google Product search. Third, by merging data available on Google Product Search with data available from AC Nielsen both here and in foreign countries, we aim to obtain a better understanding of how integrated online markets are with brick-and-mortar markets as well as understand the trade costs that exist between countries. While many price indexes try to benchmark themselves against the Consumer Price Index (CPI), it is important to realize that the CPI is an ad hoc index that is constructed without a firm theoretical basis. The absence of a theoretical underpinning for the CPI creates a conundrum for policy makers who want it to reflect the cost of living but have adopted a methodology – the Laspeyres Index, developed in the 1870s – that cannot be sensibly linked to the cost of living of any consumer with a well-defined set of preferences. As a result, statistical agencies in the U.S. and elsewhere have taken their ad hoc Laspeyres index and tried to make it track a meaningful one: a “superlative” index.

We will begin our inquiry by first examining price differences across markets. While this has been done for certain narrowly defined markets – e.g., books and contact lenses – our study will be the first to examine whether Internet prices are lower than offline prices in general. We will do this by comparing GPI data with AC Nielsen data that contains price information on 750,000 different UPC’s available in mass-merchandising stores like Wal-Mart for a variety of different countries. One of the added benefits of this comparison is that we will be able to verify the validity of click-through data as a measure of market share.

Second, we will examine how rapidly price differences dissipate across different classes of merchants. We will initially examine this across online merchants (controlling for their relevance using click-through data). This will be useful for determining how much market power online
Sponsored Research Currents  continued from page 8

merchants have. We will then conduct a similar analysis comparing price dynamics of goods available online with those available in brick-and-mortar establishments that sell goods available in AC Nielsen data. This will enable us to answer the question of whether online pricing behavior differs systematically from retail prices. This is a very important question for understanding not only market interactions but also for understanding how closely online prices are linked to offline prices. To the extent that these prices are closely linked, it will provide further validation that one can use online prices as a substitute for offline prices. Finally, it will enable us to obtain estimates for how the development of online stores affects offline marketing.

Lastly, we plan to use these data to understand international market segmentation. In particular, by comparing prices of online goods in different countries we will be able to estimate precisely how international cost shocks are transmitted across countries (what economists term “pass-through”). These types of estimates are extremely important for understanding how exchange rate movements affect prices and propagate international macroeconomic shocks.

RECENT DISCUSSION PAPERS

Learning From a Piece of Pie, 1011-05
—Pierre-André Chiappori, Olivier Donni and Ivana Komunjer

We investigate the empirical content of the Nash solution to two-player bargaining games. The bargaining environment is described by a set of variables that may affect agents’ preferences over the agreement sharing, the status quo outcome, or both. The outcomes (i.e., whether an agreement is reached, and if so the individual shares) and the environment (including the size of the pie) are known, but neither are the agents’ utilities nor their threat points. We consider both a determinstic version of the model in which the econometrician observes the shares as deterministic functions of the variables under consideration, and a stochastic one in which because of latent disturbances only the joint distribution of incomes and outcomes is recorded. We show that in the most general framework any outcome can be rationalized as a Nash solution. However, even mild exclusion restrictions generate strong implications that can be used to test the Nash bargaining assumption. Stronger conditions further allow to recover the underlying structure of the bargaining, and in particular, the cardinal representation of individual preferences in the absence of uncertainty. An implication of this finding is that empirical works entailing Nash bargaining could (and should) use much more general and robust versions than they usually do.

Matching with a Handicap: The Case of Smoking in the Marriage Market, 1011-07
—Pierre-André Chiappori, Sonia Oreffice and Climent Quintana-Domeque

We develop a matching model on the marriage market, where individuals have preferences over the smoking status of potential mates, and over their socioeconomic quality. Spousal smoking is bad for non-smokers, but it is neutral for smokers, while individuals always prefer high socioeconomic quality. Furthermore, there is a gender difference in smoking prevalence, there being more smoking men than smoking women for all education levels, so that smoking women and non-smoking men are in short supply. The model generates clear cut conditions regarding matching patterns. Using CPS data and its Tobacco Use Supplements for the years 1996 to 2007, and proxing socioeconomic status by educational attainment, we find that these conditions are satisfied. There are fewer “mixed” couples where the wife smokes than vice-versa, and matching is assortative on education within smoking types of couples. Among non-smoking wives those with smoking husbands have on average 0.14 fewer years of completed education than those with non-smoking husbands. Finally, and somewhat counterintuitively, we find that, as theory predicts, among smoking husbands those who marry smoking wives have on average 0.16 more years of completed education than those with non-smoking wives.

Fatter Attraction: Anthropometric and Socioeconomic Matching on the Marriage Market, 1011-06
—Pierre-André Chiappori, Sonia Oreffice and Climent Quintana-Domeque

We construct a matching model on the marriage market along more than one characteristic, where individuals have preferences over physical attractiveness and socioeconomic characteristics that can be summarized by a one-dimensional index combining these various attributes. We show that under a (testable) separability assumption, the indices are ordinarily identified. We estimate the model using data from the PSID. Our separability tests do not reject. We find that among men, a 10% increase in BMI can be compensated by a higher wage of around 3%. Similarly, for women, an additional year of education may compensate up to three BMI units.

Individual Homelessness: Entries, Exits, and Policy, 1011-08
—Brendan O’Flaherty

Homelessness is part of the lives of many people. But almost no one is homeless for all or most of his or her life. The median shelter homeless spell is well under a month, and even “chronic homelessness” officially entails spells of a year or so. I model homelessness as part of people’s lives in a dynamic stochastic framework in continuous time. I can explain many empirical regularities with a parsimonious model: for instance, why the last addresses of homeless people are concentrated in a few low-rent neighborhoods, why homeless entries are hard to predict, why recidivism is common and past homelessness is a good predictor of future homelessness, why some groups recidivate more often than others, why the hazard rate for shelter exit is single-peaked, why effective homelessness prevention programs do not alter the average length of homeless spells. I also examine policy. The optimal homelessness prevention program
Recent Discussion Papers continued from page 9

is Pigouvian and starkly simple. With an optimal prevention program in place, optimal shelter quality maximizes a simple and intuitive expression, and insurance programs always raise social welfare. Most of the previous economics literature about homelessness has been static, but most literature about homelessness outside economics has been dynamic. This paper tries to bring the two strands of literature closer together.

Rental Housing Assistance for the 21st Century, 1011-09
—Brendan O’Flaherty

Current rental housing assistance programs are not designed to provide a safety net for people whose lives are volatile, or to encourage poor people to live in good locations. These failings can be corrected. HUD should establish a program of rental insurance-like mortgage insurance, but for renters. Low income housing assistance formulas should be revised to reward good neighborhood features, and punish bad.

Targeted Transfers and the Fiscal Response to the Great Recession, 1011-10
—Ricardo Reis and Hyunseung Oh

Between 2007 and 2009, government expenditures increased rapidly across the OECD countries. While economic research on the impact of government purchases has flourished, in the data, about three quarters of the increase in expenditures in the United States (and more in other countries) was in government transfers. We document this fact, and show that the increase in U.S. spending on retirement, disability, and medical care has been as high as the increase in government purchases. We argue that future research should focus on the positive impact of transfers. Towards this, we present a model in which there is no representative agent and Ricardian equivalence does not hold because of uncertainty, imperfect credit markets, and nominal rigidities. Targeted lump-sum transfers are expansionary both because of a neoclassical wealth effect and because of a Keynesian aggregate demand effect.

Principled Policymaking in an Uncertain World, 1112-01
—Michael Woodford

This paper considers the consequences for the theory of economic policy of allowing for the inevitability of non-routine change in the environment in which policy is conducted. It addresses in particular the modifications that must be made to standard discussions (based on an assumption of “rational” or model-consistent expectations) of the advantages of commitment to a policy rule over a purely discretionary approach to policy. The paper argues that a certain naïve conception of a policy rule — under which it should be possible to state in advance a fully explicit formula determining a specific policy action as a function of publicly observable state variables — makes little sense once one allows for the impossibility of listing in advance all possible future states of knowledge about economic conditions, but argues that purely discretionary policy is not the only coherent alternative. Instead, the paper distinguishes between multiple levels at which a particular systematic approach to policy may simultaneously be described, and argues that a higher-level policy commitment remains both possible and desirable, even if discretion will have to be allowed in the translation

RECENT FACULTY ARTICLES

“Killing Me Softly: The Fetal Origins Hypothesis”
by Douglas Almond and Janet Currie
Journal of Economic Perspectives, Vol. 25, No. 3, Summer 2011

“After Midnight: A Regression Discontinuity Design in Length of Postpartum Hospital Stays”
by Douglas Almond and Joseph Doyle

“Fasting During Pregnancy and Children’s Academic Performance”
by Douglas Almond, Bhashkar Mazumder, and Reyn Van Ewijk
Social Science Research Network, July 26, 2011

“Estimating High Dimensional Covariance Matrices and its Applications”
by Jushan Bai and Shuzhong Shi
Columbia University Department of Economics Discussion Paper Series, August 2011

“Markets and Mortality”
by Jagdish Bhagwati

“Water Quality Violations and Avoidance Behavior: Evidence from Bottled Water Consumption”
by Wolfram Schlenker, Matthew Neidell, and Joshua Graff Zivin

“Trade Finance and the Great Trade Collapse”
by JaeBin Ahn, Mary Amiti, and David Weinstein
Visitors to the Program for Economic Research

Fall 2011

Each week, researchers and scholars visit the Columbia Economics Department under the auspices of the Program for Economic Research (PER). Interactions in workshops and seminars advance the body of knowledge and encourage collaboration between economists at Columbia and throughout the world.

Xavier Gabaix (NYU)
September 26 - 30, 2011

Christine Valente (Sheffield)
October 3 - 7, 2011

Alberto Abadie (Harvard Kennedy School)
October 18 - 20, 2011

Liran Einav (Stanford)
October 24 - 26, 2011

Luigi Guiso (European University Institute)
October 31 - November 4, 2011

Konrad Mierendorff (University of Zurich)
November 14 - 18, 2011

Patrick Rey (Toulouse)
November 28 – December 2, 2011

Bruno Strulovici (Northwestern)
December 5 – 9, 2011

Recent Discussion Papers continued from page 10

of the higher-level policy commitments into a more concrete (lower-level) description of the way that policy should be conducted under the particular future circumstances that arise. Four distinct levels of description are distinguished in the case of monetary policy, where the general idea is developed in greater detail, and the paper concludes with a discussion of ways in which the conventional theory of monetary policy should be modified in the light of the recent global financial crisis.

Principal Components Estimation and Identification of the Factors, 1112-02
—Jushan Bai and Serena Ng

It is known that the principal component estimates of the factors and the loadings are rotations of the underlying latent factors and loadings. We study conditions under which the latent factors can be estimated asymptotically without rotation. We derive the limiting distributions for the factor estimates when N and T are large and make precise how identification of the factors affects inference based on factor augmented regressions. We also consider factor models with additive individual and time effects.

Estimating High Dimensional Covariance Matrices and Its Applications, 1112-03
—Jushan Bai and Shuzhong Shi

Estimating covariance matrices is an important part of portfolio selection, risk management, and asset pricing. This paper reviews the recent development in estimating high dimensional covariance matrices, where the number of variables can be greater than the number of observations. The limitations of the sample covariance matrix are discussed. Several new approaches are presented, including the shrinkage method, the observable and latent factor method, the Bayesian approach, and the random matrix theory approach. For each method, the construction of covariance matrices is given. The relationships among these methods are discussed.

The department sponsors a discussion paper series for faculty, co-authors, and visitors. Download the full text of these papers at:

http://econ.columbia.edu/per

MacLeod Honored as Sami Mnaymneh Professor of Economics

W. Bentley MacLeod was recently announced as the Sami Mnaymneh Professor of Economics. Professor both in Economics and International and Public Affairs at Columbia University, MacLeod has a distinguished international reputation in labor economics and the economics of contracts and organizations. His seminal work on employment contracts helped lay the foundations for modern contract theory, a key area of modern applied economic theory. This work focused on how the optimal structure of employment contracts helps select workers of different ability into appropriate jobs and provide incentives for on-the-job effort. This line of research is important not only for understanding labor markets, but also for understanding unemployment in macroeconomic models.

The importance of this highly influential work was recognized by MacLeod’s election as a Fellow of the Econometric Society in 2005 as well as many other recognitions. MacLeod continues to specialize in law and labor economics, and is an editor of the Journal of Law Economics and Organization. His current focus is on how incentives are designed to take into account the complex interplay between reputation effects, market competition, and social norms. MacLeod’s current research projects include incentives and school choice, the economics of contract and tort law, and the economics of performance pay.
The discourse on global warming often tends to be abstract. In policy debates over whether environmental concerns should take precedence over short-term commercial interests, the more concrete gains of today typically win out over preventing abstract (and unmeasured) losses in the future.

But a new study conducted by Columbia Economics Assistant Professor Wolfram Schlenker, along with Professors David Lobell and Justin Costa-Roberts of Stanford University, shows that in one area at least – food production – these effects can already be seen today.

The study, titled “Climate Trends and Global Crop Production Since 1980,” published in Science on May 2011, examines the effects of measurable climate change on global crop production. Schlenker et al. find that, except in high-altitude countries where rice in particular gains from warming, a one-degree Celsius rise in temperature is estimated to lower crop yields by up to 10 percent. Far from arguing for some distant potential impact of climate change, the authors’ findings suggest that global warming already poses a measurable threat to economic production today.

This study begins by observing that, with the exception of the United States, temperature trends from 1980 to 2008 exceeded one standard deviation of historic year-to-year variability, and for many regions it has exceeded two standard deviations. This indicates that climate change is occurring and can be contrasted with the pre-1980 era in which this measured variation is not statistically different from historic year-to-year variability. The study then utilizes pre-global warming levels of weather and temperature variation to provide a counterfactual basis against which to compare the actual yields observed over the past few decades.

Following this logic, the study finds that “Models that link yields of the four largest commodity crops to weather indicate that global maize and wheat production declined by 3.8 and 5.5%, respectively, relative to [the] counterfactual without climate trends.” For a sense of the scale of this effect, the authors point out that this output loss is roughly equivalent to the annual production of maize in Mexico, and wheat in France. The authors go on to estimate that this effect has resulted in an approximately 20 percent increase in the price of maize and wheat globally over the period observed.

The study by Schlenker et al. has received broad public interest, and was reported on widely in the press. Its release has come at a time of increasing importance of the issue, as the debate on climate change and the role of policy to respond continues heatedly in the United States and around the globe. As the world population has officially passed the seven billion mark, and food shortages continue to be seen in many countries, the question of making appropriate policy responses to climate change becomes no longer an abstract discussion, but a measurable quantity of lost production, as provided by the estimates in the study.

Moreover, the authors suggest, the stakes will only be raised as more time passes. The study points out that while the average temperature rose about .13° C per decade since 1950, this increase is expected to accelerate to about .2° C per decade in the coming years. This suggests that the effect of climate change on global food prices will only be amplified in the future, and that a combination of policy responses to climate change and changes in agricultural production practices will be needed to offset these losses successfully.

“Without successful adaptation,” the study concludes, “and given the persistent rise in demand for maize and wheat, the sizable yield setback from climate change is likely incurring large economic and health costs.” As the question of food security continues to become a dominant issue in global politics, the insights of Schlenker et al.’s study will prove increasingly important, and its implications increasingly urgent.
**RECENT FACULTY BOOKS**

*Sovereign Wealth Funds and Long-Term Investing*
Joseph E. Stiglitz, Frederic Samama and Patrick Bolton  
(Columbia University Press, November 2011)

Sovereign Wealth Funds (SWFs) are state-owned investment funds with combined asset holdings that are fast approaching four trillion dollars. Recently emerging as a major force in global financial markets, SWFs have other distinctive features besides their state-owned status: they are mainly located in developing countries and are intimately tied to energy and commodities exports, and they carry virtually no liabilities and have little redemption risk, which allows them to take a longer-term investment outlook than most other institutional investors. This volume examines the specificities of SWFs in greater detail and discusses the implications of their growing presence for the world economy.

*Storable Votes: Protecting the Minority Voice*
Alessandra Casella  
(Oxford University Press, December 2011)

Storable votes are a simple voting scheme that allows the minority to win occasionally, while treating every voter equally. Because the minority wins only when it cares strongly about a decision while the majority does not, minority victories occur without large costs and indeed typically with gains for the community as a whole. This book complements a theoretical discussion with several experiments, showing that the promise of the idea is borne out by the data: the outcomes of the experiments and the payoffs realized match very closely the predictions of the theory. Because the intuition behind the voting scheme is so simple: “vote more when you care more,” the results are robust across different scenarios, even when more subtle strategic effects are not identified by the subjects, suggesting that the voting scheme may have real potential for practical applications.

*The Price of Civilization: Reawakening American Virtue and Prosperity*
Jeffrey Sachs (Random House, October 2011)

As he has done in dozens of countries around the world in the midst of economic crises, Sachs turns his unique diagnostic skills to what ails the American economy. He finds that both political parties—and many leading economists—have missed the big picture, offering shortsighted solutions such as stimulus spending or tax cuts to address complex economic problems that require deeper solutions. Sachs argues that we have profoundly underestimated globalization’s long-term effects on our country, which create deep and largely unmet challenges with regard to jobs, incomes, poverty, and the environment. America’s single biggest economic failure, Sachs argues, is its inability to come to grips with the new global economic realities.

**NBER WORKING PAPERS**

“The Role of Information in Competitive Experimentation,”
Ufuk Akcigit, Qingmin Liu  
NBER Working Paper no. 17602

“Should Derivatives be Privileged in Bankruptcy?”
Patrick Bolton, Martin Oehmke  
NBER Working Paper No. 17599

“Importing Skill-Biased Technology,”
Ariel Burstein, Javier Cravino, Jonathan Vogel  
NBER Working Paper No. 17460

“Estimators for Persistent and Possibly Non-Stationary Data with Classical Properties,”
Yuriy Gorodnichenko, Anna Mikusheva, Serena Ng  
NBER Working Paper No. 17424

“Fiscal Stimulus in a Monetary Union: Evidence from U.S. Regions,”
Emi Nakamura, Jón Steinsson  
NBER Working Paper No. 17391

“Is New Economic Geography Right? Evidence from Price Data”
Jessie Handbury, David Weinstein  
NBER Working Paper No. 17067

“Coercive Contract Enforcement: Law and the Labor Market in 19th Century Industrial Britain”
Suresh Naidu, Noam Yuchtman  
NBER Working Paper No. 17051
SEPTEMBER 14
*Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*
Esther Duflo and Abhijit Banerjee (MIT) discussed their latest book, “Poor Economics”, with Jeffrey Sachs.
Co-sponsored by the Columbia Business School Social Enterprise Program

SEPTEMBER 21
*The Escalating European Debt Problem: Is There a Way Out?*
Columbia Economics Professors Richard Clarida, Ricardo Reis and Columbia Business School Professor Charles Calomiris

OCTOBER 20
*“Unemployment, the Labor Market, and the Economy”*
An Address by Board of Governors of the Federal Reserve System, Daniel K. Tarullo
Co-sponsored by the World Leaders Forum

NOVEMBER 19-20
*Tenth Annual Columbia-Duke-Northwestern IO Theory Conference*
Co-sponsored by Columbia Business School, Northwestern University and Duke University

DECEMBER 5
*Multilateralism in Trade at Risk: Should and Can we Rescue the Doha Round?*
Co-sponsored by the World Leaders Forum