PER has been rapidly expanding its activities aimed at supporting students and faculty at Columbia. After moving to our new offices on the 11th floor, PER has continued its push for greater development of departmental resources and goals throughout this past semester.

One of the main activities of PER has been to help faculty connect with external granting agencies. I’m happy to report that this year, Columbia economics faculty were successful in bringing in 12 new grants from National Science Foundation, MacArthur Foundation, and Institute for New Economic Thinking. These grants will bring in a total of 2.3 million dollars of new research funds to Columbia.

We have already started to use this money to invest heavily in the new Social Science Computing Cluster, which is an interdisciplinary computing cluster designed to facilitate quantitative work in the social sciences. PER is also now leveraging these new sources of funding to help set up early-stage seed funds for faculty and students interested in doing research. Our hope is that these grants will help aid in the development of exciting new ideas and proposals.

On my way to a meeting at Hamilton Hall I paused to admire the statue of Alexander Hamilton in front of the building. This made me think about how the prominence of economics, and particularly financial economics, has come full circle.

Alexander Hamilton was a student at King’s College in 1775 when it closed during the Revolutionary War, and Hamilton was instrumental in reinventing it as Columbia College eight years later. The year after Hamilton was forced to drop out of college not only marked the birth of a new country, but also saw the dawn of modern economics with the publication of Adam Smith’s *The Wealth of Nations*. There were no economics courses at King’s College in 1775, but Hamilton clearly read and was influenced by Smith. Hamilton became the nation’s first U.S. Secretary of the Treasury, and is sometimes called the nation’s first economist. The Revolutionary War bequeathed the new country an economic and financial mess. As Hamilton introduced fundamental economic and financial market reforms to deal with it, he was guided by some of the best economic thinking of the day.

The Reverend John McVickar joined Columbia College in 1817 as Professor of Moral Philosophy, Rhetoric, Belles Lettres and Political Economy, and soon began teaching courses on political economy. Indeed Columbia College was among the earliest colleges in the United States to include a political economy course in its curriculum. McVickar also holds the distinction of having written the first American textbook on the subject, entitled *The Principles of Political Economy Applied to the Conditions, Resources, and the Institutions of the American People*, published
in 1856. Today, Nobel Prize winner Edmund Phelps is the McVickar Professor of Political Economy at Columbia. What a legacy!

By 1883 McVickar’s political economy class was a required course taught by Professor Richmond Mayo-Smith, whose work focused primarily on statistics, and who founded the Department of Economics and Social Sciences together with John Bates Clark, Edwin Seligman, and Henry Rogers Seager. This core of faculty formed the backbone of the Columbia Economics department at the end of the 19th century. Mayo-Smith taught the introductory economics class to undergraduates until his retirement, and as the class became too large for Mayo-Smith to handle by himself, some of the grading was handed off to a graduate student, thus producing one of the first TAs. The class was renamed Principles of Economics in 1920, and John Bates Clark contributed to the early development of the undergraduate program by establishing an economics seminar. Elective courses in these early years, available only to seniors and some juniors, included “Economic History of Europe and America,” “The Labor Problem,” “Industrial and Tariff History of the US,” and “The Science of Finance.”

By 1954, six faculty members were teaching undergraduate courses in economics, offering courses in theory, history of economic thought, money and banking, public finance, labor, and economic history. The late C. Lowell Harriss contributed significantly to the growth of the department, and developed an enduring reputation as an immensely approachable teacher and mentor to countless undergraduates in Economics over the course of his long career at Columbia. In the words of Ben Stein, economist, author and television personality, “I am also in [Dr. Harriss’s] debt for his total availability to students in his office, at dinner, for a hamburger after class, to explain and comment on the economic events of the day. I never had a better teacher in any school.”

Columbia’s undergraduate economics program produced many prominent and successful alumni, for example, Ben Stein (CC Economics ’66) and Robert Kraft (Chairman and CEO of the Kraft Group and owner of the New England Patriots, CC Economics ’63). One need look no further for additional examples than among the founding members of the contemporary department’s Economic Advisory Council: Mark Kingdon (EAC chair and CC Economics ’71), a prominent hedge fund manager as founder of Kingdon Capital Management LLC; Miles Freedman, real estate developer and founder of GFD Management Inc. (CC Economics ’69); and Charles Santoro, a private equity investor as co-founder of Sterling Investment Partners L.P. (CC Economics ’82). Our EAC members are strongly committed to the excellence of the department because they recognize value of a Columbia Economics education. The department is proud to have them at its side.

Columbia Economics has a longstanding and close relationship with the world of finance, and many undergraduates majored in Economics specifically to pursue careers on Wall Street. The department went a step further this year—by introducing a new major in Financial Economics. The FE Major retains the same rigorous outlines of the traditional Economics major (still an option), but additionally requires Corporate Finance, Financial Accounting, and Financial Economics. These core courses provide an overview of the financial economics field and a solid grounding in the fundamentals of finance, to be complemented by a choice of numerous electives and the capstone senior seminar. The FE major is in partnership with the Columbia Business School, and shares some courses with the also new Special Concentration in Business Management, but the FE major is distinguished by the rigor and structure of the Economics curriculum. Evaluating the Policy that created the Tax Multiplier,” by Ryan Chahour, Stephanie Schmitt-Grohe, Martin Uribe. NBER Working Paper #16169

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**NBER WORKING PAPERS**

“Crises and Recoveries in an Empirical Model of Consumption Disasters,”
by Emi Nakamura, Jon Steinsson, Robert Barro, Jose Ursua.
NBER Working Paper #15920

“Identifying Supply and Demand Elasticities of Agricultural Commodities: Implications for the US Ethanol Mandate,”
by Michael J. Roberts, Wolfram Schlenker.
NBER Working Paper #15921

“Credit Default Swaps and the Empty Creditor Problem,”
by Patrick Bolton, Martin Oehmke.
NBER Working Paper #15999

“Great Expectations: Law, Employment Contracts, and Labor Market Performance,”
by W. Bentley MacLeod.
NBER Working Paper #16048

“The Optimal Rate of Inflation,”
by Stephanie Schmitt-Grohe, Martin Uribe.
NBER Working Paper #16054

“Maternal Health and the Baby Boom,”
by Stefania Albanesi, Claudia Olivetti.
NBER Working Paper #16146

“A Model-Based Evaluation of the Debate on the Size of the Tax Multiplier,”
by Ryan Chahour, Stephanie Schmitt-Grohe, Martin Uribe.
NBER Working Paper #16169

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VISITORS TO THE PROGRAM FOR ECONOMIC RESEARCH

SPRING 2010

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.

Mark Watson
(Princeton) February 8-9, 2010

Kalina Manova
(Stanford) February 24-26, 2010

Moritz Meyer-ter-Vehn
(UCLA) March 1-5, 2010

Andrea Galeotti
(University of Essex) March 8-12, 2010

Yongmin Chen
(University of Colorado at Boulder) March 23-26, 2010

Olivier Tercieux
(Paris School of Economics) March 29 – April 2, 2010

Matthew Rabin
(Berkeley) April 5-9, 2010

Fuhito Kojima
(Stanford) April 12-16, 2010

Chulhee Lee
(Seoul National University) April 27-30, 2010

Gianmarco Ottaviano
(University of Bologna) April 28 – May 6, 2010

Jonathan Levin
(Stanford) May 3-7, 2010

Letter from the Chair continued from page 2

not only is the most popular major, but also attracts some of best and brightest students.

The recent financial crisis resulted in a global recession, and highlighted once more the critical role that financial markets and institutions play in shaping the real economy. Policy makers, business leaders, and academics continue to debate the financial market reforms and regulations that will shape financial institutions in the future. Against this backdrop, Financial Economics provides an academic framework in which to explore both what went wrong and what is the way forward. Columbia Economics is committed to equipping its next generation of alumni with the best economic thinking of the day. In the wake of today’s economic and financial mess, they will need that guidance.

Yours truly,

Michael H. Riordan

News from the Program for Economic Research continued from page 1

Last summer, PER awarded 15 graduate students with summer research awards and paid for two undergraduate summer research internships. One of the most exciting initiatives came in PER’s efforts to help launch the first undergraduate economics journal – The Columbia Economics Review – which will commence publication this fall. Moreover, our new space has provided for a large number of carrels on the 11th floor, for students working on research projects with faculty. This proximity helps enhance interactions between students and their advisors and create new synergies for the department.

In addition, PER has also been funding a series of new student faculty workshops, or “colloquia”, which have transformed graduate teaching at Columbia. These student-faculty lunches and workshops enable all graduate students in years 3 and above to present their research to an audience of fellow students and faculty. The colloquia have dramatically increased student-faculty interactions and represent a major new initiative in improving the graduate program at Columbia.

Finally, PER has continued its efforts to bring in exciting speakers to Columbia. This semester, in conjunction with the World Leaders Forum, PER sponsored a talk with Howard Davies, the Director of the London School of Economics and former chairman of the Financial Services Authority, the UK’s single financial regulator. His talk in Low Library entitled, “Banking on the Future: The Fall and Rise of Central Banking,” was introduced by Lee Bollinger and drew a large crowd of students and professors.

PER also arranged two major events in month of December. First, we co-sponsored with La Maison Française a talk in December by Jacques de Larosière, the former Governor of the Bank of France and the current Advisor to the Chairman at BNP Paribas. Last, but not least, we were also quite excited to co-sponsor the third annual Arrow Lecture, titled “Speculation, Trading, and Bubbles,” which features José Scheinkman from Princeton. This continues PER’s ongoing efforts to support the development of new theories to understand financial crises.

In sum, I’m very happy to report that PER has been quite active in fostering research, teaching, and new programs at Columbia. Although still very much a startup enterprise, PER is growing to be an important resource for economics and interdisciplinary quantitative social science work at Columbia.

David E. Weinstein is the Executive Director of the Program for Economic Research and the Carl S. Shoup Professor of the Japanese Economy.
Columbia Economics Professor Katherine Ho was announced as the 2010 recipient of the Kenneth Arrow Award for Best Paper in Health Economics, an award conferred annually by the International Health Economics Association. The paper for which she received her award was originally published in the American Economic Review, and is entitled “Insurer-Provider Networks in the Medical Care Market.”

Support Columbia Economics

Your tax-deductible donation can directly provide crucial support for students and faculty, through the Economics Department’s Program for Economic Research or through the C. Lowell Harriss Memorial Fund.

http://giving.columbia.edu/giveonline/?schoolstyle=306

You may also write to us at Program for Economic Research, Department of Economics, Columbia University, 1022 International Affairs Building, 420 W. 118th Street, New York, NY 10027.

Jagdish Bhagwati, University Professor of economics and law at Columbia University, has been selected by the leaders of Britain and Germany to head a panel that will look at ways to boost world trade. Bhagwati, also a Senior Fellow in International Economics at the Council on Foreign Relations, will lead this unprecedented effort with Peter Sutherland, former director general of the World Trade Organization.

This group of experts, also sponsored by Indonesia and Turkey, has been formed at a time when world leaders seek to find ways to liberalize trade and smooth the path for a global economic recovery. As British Prime Minister David Cameron and German Chancellor Angela Merkel said in a statement, “Trade is the engine of global growth. That is why we have put boosting trade and tackling trade barriers high on our governments’ agendas and want to see a strong political commitment to liberalizing trade at the Seoul G20 summit.”

Bhagwati’s panel is expected to report back early next year with recommendations on tariff revisions as well as how to change regulations and administrative rules that now serve as barriers to trade.

Another aim of the panel is to find a way to revive the Doha Round of trade negotiations by the World Trade Organization. Those talks, aimed at loosening trade restrictions, were started in 2001, and stalled two years ago by an impasse over agricultural import rules.

Considered the father of the market reforms that transformed India’s economy, Jagdish Bhagwati has been regarded as among the most creative international trade theorist of his generation and a leader in the fight for free trade. Bhagwati has been Economic Policy Adviser to the Director General, GATT (1991-93) and special adviser to the UN on globalization. He has been celebrated with six Festschriften—scholarly writings—in his honor.

In addition to having received countless awards and honorary degrees, Bhagwati has published more than 300 articles and has authored or edited over 50 volumes. His most recent book, *Termites in the Trading System*, addresses the deleterious effects of preferential trade agreements. Columbia University has also recognized his achievements by founding the Jagdish Bhagwati Chair in Indian Political Economy, now occupied by economist Arvind Panagariya.
PANDERING TO PERSUADE

By Navin Kartik

A central issue in organizations and markets is information transmission. When one party (an “agent”) is privately informed about something that another party (a “decision maker” or “principal”) cares about, communication is strategic whenever their interests are not fully aligned. For various reasons, contracts and other mechanisms have limited power to align incentives. It is therefore important to understand the scope for credible revelation of private information through pure communication. This broad topic is one of my main research interests. Here I will describe a specific recent project in this area, which is particularly fitting for the Newsletter because it is joint work with Columbia colleagues Yeon-Koo Che and Wouter Dessein.

Our working paper, “Pandering to Persuade”, develops a game-theoretic model to understand cheap-talk communication when an agent and a decision maker (DM, hereafter) have congruent interests over a set of alternatives, but the agent does not internalize the DM’s value from an outside option or status quo. Crucially, their common value from each of the alternatives is unknown to the DM; it is instead the unverifiable private information of the agent. “Cheap talk” refers to non-binding and costless messages that are sent by the agent to the DM about the value of the alternatives.

This basic structure captures the essence of many applications. For concreteness, think about a buyer-seller setting, where the seller has two products available and the buyer must make a decision whether to purchase either, and if so, which one. The seller knows how suitable each product is for the buyer’s needs and would like to match the buyer with the more suitable product. (Issues like different profit margins for the seller on the products may also be relevant and can be accommodated, but it is useful to suppress them at a first pass.) Naturally, however, the seller wants the buyer to buy some product rather than neither; hence the conflict over the buyer’s outside option of purchasing nothing.

Typically, the alternatives will “look different” to the DM. For example, in the buyer-seller application, the two products may have received different reviews, have manufacturers with different reputations, or one may currently be more popular with other consumers.

We find that in such settings, equilibrium communication takes the form of comparisons between alternatives, and any message from the agent is interpreted as a recommendation about which alternative the DM should choose. Ineluctably, communication is beset by pandering: the agent will sometimes recommend an alternative that looks good to the DM, even when he knows that it is in fact worse that some other alternative. This is despite both parties’ interests being aligned over the set of alternatives: when the agent panders, they would both be better off if the agent could instead convince the DM to choose the option with higher value!

The pandering distortion is unavoidable, however, because in addition to caring about the value of the chosen alternative, the agent is also trying to persuade the DM to not choose the outside option. If the agent were to always recommend the best alternative, then a recommendation for ex-ante attractive or “better-looking” alternatives would generate a more favorable assessment from the DM about the benefit of foregoing the outside option. Consequently, for some outside option values, the DM would accept the agent’s recommendation of better-looking alternatives but stick with the outside option when an ex-ante less-attractive or “weaker-looking” alternative is recommended. This generates the incentive for the agent to distort his recommendation toward better-looking alternatives.

Interestingly, despite this incentive, we find that influential communication can still place. The idea is that if the agent recommends an ex-ante less-attractive option only it is sufficiently better—not just better—than others, it becomes more acceptable to the DM when recommended, because she knows that the agent is subjecting this alternative to a higher standard, so to speak. In turn, such a strategy will be optimal for the agent if he correctly anticipates that a recommendation for the less-attractive option has some chance of being accepted but is not as likely to pass as a recommendation for the better-looking option.

After uncovering various subtleties about what makes an alternative better looking than another (sneak peek: it need not coincide with higher ex-ante expectation), we study responses that organizations and markets can take to mitigate the communication distortion that is induced by pandering. Inter alia, we show that if a DM can commit to delegate the choice to the agent, both parties would be better off. As one application, this helps explain why commitments to buy can be useful in buyer-seller relationships. Of course, commitment can be difficult because, for some choices that the agent will make, the DM would like to renege ex post. If the agent anticipates such reneging, the problem dissolves into that of pure communication.

In my view, our analysis is pertinent to and sheds light on various real-world applications. In addition to classic buyer-seller problems, it applies to other markets for advice, e.g., with portfolio managers, consultants, or rating agencies. There are possible implications for statistical discrimination in labor markets.

Let me wrap up, however, by mentioning the relevance of the research for resource allocation problems within firms and other organizations. Within firms, divisions compete for scarce resources, with each having a bias toward allocations of resources that favor it. This can affect which projects a division pursues or endorses, for the reasons I have highlighted. There are obvious analogs within other kinds of organizations, including at universities, both across and within departments. As faculty recruitment season descends upon us, these issues hit particularly close to home!

Navin Kartik, Associate Professor of Economics, was awarded a Sloan Research Fellowship in 2010.
The department sponsors a discussion paper series for faculty, co-authors, and visitors. Download the full text of these papers at:

http://www.columbia.edu/cu/economics

Matching with Trade-offs: Preferences over Competing Characteristics, 0910-14
—Alfred Galichon and Bernard Salanié

We investigate in this paper the theory and econometrics of optimal matchings with competing criteria. The surplus from a marriage match, for instance, may depend both on the incomes and on the educations of the partners, as well as on characteristics that the analyst does not observe. The social optimum must therefore trade off matching on incomes and matching on educations. Given a flexible specification of the surplus function, we characterize under mild assumptions the properties of the set of feasible matchings and of the socially optimal matching. Then we show how data on the covariation of the types of the partners in observed matches can be used to estimate the parameters that define social preferences over matches. We provide both nonparametric and parametric procedures that are very easy to use in applications.

Higher Order Improvements for Approximate Estimators, 0910-15
—Dennis Kristensen and Bernard Salanié

Many modern estimation methods in econometrics approximate an objective function, through simulation or discretization for instance. The resulting “approximate” estimator is often biased; and it always incurs an efficiency loss. We here propose three methods to improve the properties of such approximate estimators at a low computational cost. The first two methods correct the objective function so as to remove the leading term of the bias due to the approximation. One variant provides an analytical bias adjustment, but it only works for estimators based on stochastic approximators, such as simulation-based estimators. Our second bias correction is based on ideas from the resampling literature; it eliminates the leading bias term for non-stochastic as well as stochastic approximators. Finally, we propose an iterative procedure where we use Newton-Raphson (NR) iterations based on a much finer degree of approximation. The NR step removes some or all of the additional bias and variance of the initial approximate estimator. A Monte Carlo simulation on the mixed logit model shows that noticeable improvements can be obtained rather cheaply.

The Central Bank Balance Sheet as an Instrument of Monetary Policy, 0910-16
—Vasco Córdia and Michael Woodford

While many analyses of monetary policy consider only the adjustment of a central bank’s target for a short-term nominal interest rate, other dimensions of policy have recently been of greater importance: changes in the supply of bank reserves beyond those required to achieve an interest-rate target, changes in the assets acquired by central banks, and changes in the interest rate paid on reserves. We extend a standard New Keynesian model to allow a role for the central bank’s balance sheet in equilibrium determination, and consider the connections between these alternative dimensions of policy and traditional interest-rate policy. We distinguish between “quantitative easing” in the strict sense and targeted asset purchases by a central bank, and argue that while the former is likely to be ineffective at all times, the latter dimension of policy can be effective when financial markets are sufficiently disrupted. Neither is a perfect substitute for conventional interest-rate policy, but purchases of illiquid assets are particularly likely to improve welfare when the zero lower bound on the policy rate is reached. We also consider optimal policy with regard to the payment of interest on reserves, and argue that the interest rate on reserves should be kept near the central bank’s target for the policy rate at all times.

Conventional and Unconventional Monetary Policy, 0910-17
—Vasco Córdia and Michael Woodford

We extend a standard New Keynesian model to incorporate heterogeneity in spending opportunities and two sources of (potentially time-varying) credit spreads, and to allow a role for the central bank’s balance sheet in equilibrium determination. We use the model to investigate the implications of imperfect financial intermediation for familiar monetary policy prescriptions, and to consider additional dimensions of central-bank policy—variations in the size and composition of the central bank’s balance sheet, and payment of interest on reserves—alongside the traditional question of the proper choice of an operating target for an overnight policy rate. We also give particular attention to the special problems that arise when the zero lower bound for the policy rate is reached. We show that it is possible to provide criteria for the choice of policy along each of these possible dimensions, within a single unified framework, and to provide policy prescriptions that apply equally when financial markets work efficiently and when they are subject to substantial disruptions, and equally when the zero bound is reached and when it is not a concern.

Optimal Monetary Stabilization Policy, 0910-18
—Michael Woodford

This chapter reviews the theory of optimal monetary stabilization policy in New Keynesian models, with particular emphasis on developments since the treatment of this topic in Woodford (2003). The primary emphasis of the chapter is on methods of analysis that are useful in this area, rather than on final conclusions about the ideal conduct of policy (that are obviously model-dependent, and hence dependent on the stand that one might take on many issues that remain controversial), and on general themes that have been found to be important under a range of possible model specifications. With regard to methodology, some of the central themes of this review will be the application of the method of Ramsey policy analysis to the problem of the optimal conduct of monetary policy, and the connection that can be established between utility maximization and linear-quadratic policy problems of the sort often considered in the central banking literature. With regard to the structure of a desirable decision framework for monetary policy deliberations, some of the central themes will be the importance of commitment for a superior stabilization outcome, and more generally, the importance of advance signals about the future conduct of policy: the advantages of history-dependent policies over purely forward-looking approaches; and the usefulness of a target criterion as a way of characterizing a central bank’s policy commitment.

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Recent Discussion Papers continued from page 6

The Central-Bank Balance Sheet as an Instrument of Monetary Policy (Revised), 0910-19
—Vasco Cúrdia and Michael Woodford

While many analyses of monetary policy consider only a target for a short-term nominal interest rate, other dimensions of policy have recently been of greater importance: changes in the supply of bank reserves, changes in the assets acquired by central banks, and changes in the interest rate paid on reserves. We extend a standard New Keynesian model to allow a role for the central bank’s balance sheet in equilibrium determination, and consider the connections between these alternative dimensions of policy and traditional interest-rate policy. We distinguish between “quantitative easing” in the strict sense and targeted asset purchases by a central bank, and argue that while the former is likely be ineffective at all times, the latter dimension of policy can be effective when financial markets are sufficiently disrupted. Neither is a perfect substitute for conventional interest-rate policy, but purchases of illiquid assets are particularly likely to improve welfare when the zero lower bound on the policy rate is reached. We also consider optimal policy with regard to the payment of interest on reserves; in our model, this requires that the interest rate on reserves be kept near the target for the policy rate at all times.

Identifying Finite Mixtures in Econometric Models, 0910-20
—Marc Henry, Yuichi Kitamura and Bernard Salanié

Mixtures of distributions are present in many econometric models, such as models with unobserved heterogeneity. It is thus crucial to have a general approach to identify them nonparametrically. Yet the literature so far only contains isolated examples, applied to specific models. We derive the identifying implications of a conditional independence assumption in finite mixture models. It applies for instance to models with unobserved heterogeneity, regime switching models, and models with mismeasured discrete regressors. Under this assumption, we derive sharp bounds on the mixture weights and components. For models with two mixture components, we show that if in addition the components behave differently in the tails of their distributions, then components and weights are fully nonparametrically identified. We apply our findings to the nonparametric identification and estimation of outcome distributions with a misclassified binary regressor. This provides a simple estimator that does not require instrumental variables, auxiliary data, symmetric error distributions or other shape restrictions.

Competitive Equilibrium in Markets for Votes, 0910-21
—Alessandra M. Casella, Aniol Llorente-Saguer and Thomas R. Palfrey

We develop a competitive equilibrium theory of a market for votes. Before voting on a binary issue, individuals may buy and sell their votes with each other. We define ex ante vote-trading equilibrium, identify weak sufficient conditions for existence, and construct one such equilibrium. We show that this equilibrium must always result in dictatorship and the market generates welfare losses, relative to simple majority voting, if the committee is large enough. We test the theoretical implications by implementing a competitive vote market in the laboratory using a continuous open-book multi-unit double auction.

SIR HOWARD DAVIES ON CENTRAL BANKING

On October 20, 2010, Sir Howard Davies, director of the London School of Economics and Political Science, gave a public lecture entitled “Banking on the Future: The Fall and Rise of Central Banking,” held in Low Library. The event was organized as part of the World Leaders Forum and co-sponsored by the Program for Economic Research, with PER Director David Weinstein. Sir Davies gave a fascinating and nuanced overview of how the crisis developed, and then went on to use his considerable expertise — honed in his experience as deputy governor of the Bank of England, and prior to that as chairman of the Financial Services Authority, the UK’s single financial regulator since 1998 — to describe the prospects for central banking to mediate bubble formation and financial crises in the future.
This project develops the theory for identification of dynamic stochastic general equilibrium (DSGE) models and studies its implications for estimation and inference. DSGE models have now reached the level of sophistication to permit analysis of important macroeconomic issues. Whereas the parameters in these models used to be calibrated, numerical advances in the last two decades have made it possible to estimate models with as many as a hundred parameters. Researchers are, however, aware that not all the parameters of interest can be consistently estimated because of identification problems: that different structural parameters can lead to indistinguishable outcomes. In spite of the recognition of this identification issue, a procedure has yet to be developed that tells us in a systematic manner how many parameters are identifiable, and if so which ones.

The first goal of this project is to study conditions under which a DSGE model is identifiable. The analysis is nonstandard as classical conditions for identification rely on assumptions that do not generally hold in DSGE models. Our proposal is to use the tight structure of DSGE models in order to establish new rank and order conditions for identification. Such conditions have not yet been proposed in the literature. The focus is on covariance stationary process and the first step is to make precise the sense in which two dynamical systems can have observationally equivalent spectral densities. Adapting results from control theory, it is shown that the Markov (impulse response) parameters and the error variance of equivalent DSGE models must be related through a similarity transformation. These restrictions are then used to establish conditions under which DSGE models are identifiable from the spectrum of the observables. We will show that a DSGE model is identifiable even when its reduced form parameters are not. Formal identification conditions will be developed to explicitly handle the presence of measurement errors.

The second goal of this project is to study the estimation of DSGE model parameters. It is a well known fact that parameters that are not identifiable cannot be consistently estimated. This has important implications for both frequentist as well as Bayesian analysis as local non-identification leads to strange behavior of posteriors when flat priors are used. In spite of the importance of this problem, the literature on full information estimation and inference of DSGE models has now reached the level of sophistication to permit analysis of important macroeconomic issues. DSGE models have now reached the level of sophistication to permit analysis of important macroeconomic issues. Whereas the parameters in these models used to be calibrated, numerical advances in the last two decades have made it possible to estimate models with as many as a hundred parameters. Researchers are, however, aware that not all the parameters of interest can be consistently estimated because of identification problems: that different structural parameters can lead to indistinguishable outcomes. In spite of the recognition of this identification issue, a procedure has yet to be developed that tells us in a systematic manner how many parameters are identifiable, and if so which ones.

This project focuses on two issues. First, how to test statistical hypothesis in singular systems such as DSGE models when the parameters of interest are point identified but the nuisance parameters are not. Second, how to conduct inference in dynamic and possibly singular models when the parameters of interest are themselves only set identified. These problems are challenging, but are also relevant outside of the DSGE framework.

Economic theory often has little to say about the specific functional forms of components entering economic models. This has lead to an increased use of non- and semiparametric estimation and testing methods in economics since these in general impose weaker functional restrictions on the models of interest.

Many popular non- and semiparametric estimators involve so-called kernel-smoothing. However, these can be challenging to implement since they involve choosing appropriate bandwidths which are an integral part of the estimators: The resulting estimators are in general sensitive to the bandwidth choice. Unfortunately, theory offers few guidelines for how these should be chosen in finite samples: First of all, the bandwidth does not appear in the asymptotic distribution of the parametric estimator. Secondly, for the first-step estimation error to vanish at an optimal rate, undersmoothing is required. This rules out standard bandwidth selection methods such as plug-in and cross-validation. For a few special estimators, methods have been developed, but these can be complicated to implement and do not always perform well.

We here propose a novel class of semiparametric profile estimators that do not suffer from these problems: We develop a modified version of the standard objective (likelihood) function defining the estimator. The modification entails that it can be used to estimate both the nonparametric component and the parametric one. The advantages of this modification are three-fold: First, the modification ensures that an error term normally appearing in the expansion of the parametric estimator now vanishes. Thus we expect that the modified version will have better finite-sample properties. Second, by removing the error term, we do not have to undersmooth in order for the first-step estimation error to vanish at an optimal rate. Hence standard bandwidth selection methods can be used. Finally, the proposed modified estimator is no more difficult to implement than standard estimators and require no heavy computations.

The third goal of the project is to focus on inference in DSGE models. Partially identified models pose challenging problems for testing. The project focuses on two issues. First, how to test statistical hypothesis in singular systems such as DSGE models when the parameters of interest are point identified but the nuisance parameters are not. Second, how to conduct inference in dynamic and possibly singular models when the parameters of interest are themselves only set identified. These problems are challenging, but are also relevant outside of the DSGE framework.

This project will develop new estimation methods for singular systems without throwing away information or adding stochastic errors.
We also demonstrate how the modified objective function can be used to improve on existing non- and semiparametric testing procedures using kernel-smoothing methods. The modified tests are shown to dominate the original ones in terms of Pitman’s relative efficiency criterion and as such are more powerful. As with the kernel-based semiparametric estimation procedures, the issue of how to select bandwidths in the implementation of kernel-based testing procedures is to a large extent unresolved. We will examine the issue of bandwidth selection for the new class of test statistics developed in this project.

The novel procedures can be used to improve upon existing econometric methods developed for many semiparametric models, including partially linear models, single-index models, (semi-)varying-coefficient models, and models with time-varying parameters. These and many other models will be considered in the project.

Janet Currie – Differential Impacts of Environmental Policy on Infants in Poor and Minority Neighborhoods (MacArthur Foundation)

The hazards people are exposed to are affected by where they live, and minority and low-income children may be both disproportionately exposed to environmental pollution less able to deal with the consequences of such exposure. Exposure during the fetal period and in infancy may be particularly harmful, and lead to lifelong consequences. Hence, policies to clean up pollution might be expected to have particular benefits for poor and minority infants. When measuring benefits, it is important to take account of the potential effects through the housing market. When an environmental policy is successful, it may increase housing costs and poor and minority children may be displaced. In such a case, housing market effects could undo some of the positive effects of environmental cleanups for these children.

This research considers several such pollution-related policies, including Superfund cleanups, changes in regulations covering the Toxic Release Inventory, and the introduction of the electronic toll collection systems on roadways – initiatives that take differing approaches to ameliorating environmental problems. The study will explore whether vulnerable children suffer greater exposure, and whether such vulnerable children are benefit differentially from a given policy. This research will entail a statistical analysis of a unique longitudinal data base created from millions of U.S. birth records that includes large samples of African American, Asian, and Hispanic children. Less-educated mothers, teen mothers, and mothers in high-poverty neighborhoods also can be identified.

The results of this study will shed new light on the environmental justice literature by examining the extent to which environmental policies close gaps in exposures and outcomes between poor and minority infants and others, and on the extent to which these policies displace vulnerable mothers and infants from the newly-improved neighborhoods. These research outcomes also will show how spatial disparities in exposures arise, and how persistent they are likely to be. The ultimate goal of the research is to suggest policies to improve outcomes and minimize displacement. Since most neighborhood improvements can be expected to affect housing prices, the results will have relevance to other place-based policies, as well.

**Sponsored Research Currents continued from page 8**

Eli Shapiro, Distinguished Economist, Passes Away at 94

Eli Shapiro (Ph.D. ’39), a financial economist who served as NBER President between 1982 and 1984, passed away last week in Boston at the age of 94. Eli was a graduate of Brooklyn College, and later went on to obtain his doctorate from Columbia in 1939. In the course of his academic career, Eli taught at the University of Chicago, the Harvard Business School, and the MIT Sloan School of Management. At the time of his death he was the Alfred P. Sloan Professor of Management, Emeritus, at MIT. Eli joined the NBER in 1938 as a research economist, and, with some interruptions, was a member of the Bureau’s research staff until the early 1960s. His research focused on corporate finance and the links between financial and real activity - topics that are as relevant today as they were when he began studying them more than seventy years ago. Eli was elected to the NBER Board of Directors in 1974, and he became Chairman of the Board in 1980. He relinquished that position when he became NBER President in 1982, and remained a board member when he stepped down as President in 1984. In 1993, he became a director emeritus. Eli was an important contributor to the NBER and to the fields of economics and finance, and he will be deeply missed.
INAUGURATING THE DEPARTMENT’S NEW HOME

In September, 2010, the Economics Department expanded beyond the 10th floor into newly renovated quarters on the 11th floor of the International Affairs Building. The light-filled space includes faculty offices, a lounge, technology-equipped seminar and meeting rooms, as well as greatly enhanced work space for graduate students and visiting fellows. At the Chair’s welcome party, students and faculty had an opportunity to tour the finished spaces.

Visiting Professor Glenn Loury (left) with Yeon-Koo Che and Michael Riordan (right)

Researchers and students will make use of the new carrels in the east and west wing of the 11th floor, positioned centrally near the conference room space and faculty offices

The Chair’s welcome party this autumn was held in the new Economics Faculty Lounge and adjacent new seminar room, to inaugurate the renovation of the 11th floor of the International Affairs Building
Graduate students Christine Pal (left) and Petra Persson (right)

Students take a look at the new 11th floor west wing, which includes faculty offices and student carrels, with Graduate Coordinator Jody Johnson

Professors Yeon-Koo Che (left) and Michael Riordan (right) greet SIPA Dean John Coatsworth (center)
This year, The Journal of Econometrics dedicated an entire issue (158) to Phoebus J. Dhrymes, Edwin W. Rickert Professor of Economics at Columbia University, for, in their words, “his multifaceted contributions to Econometrics spanning almost half a century.” Professor Dhrymes, who received his Ph.D. at MIT in 1961, taught for a time at Harvard and the University of Pennsylvania before becoming a professor at Columbia for the remainder of his career. Following is an excerpt of the Editorial Introduction to the issue, which testifies to the lasting impact of Dhrymes’ work:

Phoebus has made substantial contributions to econometric theory by publishing many influential papers in leading journals as well as several outstanding texts on the foundations and methods of econometrics. His early research began with an applied econometric focus on problems of production and investment. His later contributions concentrated on the foundations of econometric methodology, including systems of simultaneous equations and time series analysis. Throughout the econometrics community, Phoebus J. Dhrymes is additionally extremely well known for his influential textbooks, some of which have been translated into several languages. His 1970 book Econometrics: Statistical Foundations and Applications (Dhrymes, 1970) provided an accessible and rigorous foundation for both students and teachers of econometrics.

His subsequent books have continued to treat foundational issues and have tracked new areas of econometric interest through to his 1997 book on Time Series, Unit Roots and Cointegration (Dhrymes, 1997). Reading his books reveals Dhrymes as a teacher, synthesizer and master expositor. Phoebus served as managing editor and editor of the International Economic Review (IER) between 1965 and 1971, elevating the IER to one of the top five journals in applied econometrics.

Phoebus was also instrumental in founding the Journal of Econometrics in 1973, serving as one of its first three co-editors (Dennis Aigner and Arnold Zellner being the other two). One motivation of this special issue is to honor him for his exemplary contributions to econometrics through his role in creating the first journal solely devoted to the field.

The introduction then continues by giving an overview of the papers to follow in the issue, most of which were presented in a conference entitled “Econometric Theory and Practice”, which took place at his birthplace in Paphos, Cyprus, 1–3 June 2007 and was held in his honor. The remainder of the edition’s articles devoted to exploring the exceptional range of Dhrymes’ scholarly work.

RECENT FACULTY BOOKS

*Seeds of Destruction: Why the Path to Economic Ruin Runs Through Washington, and How to Reclaim American Prosperity*

R. Glenn Hubbard and Peter Navarro
(FT Press, August 2010)

In this book, a top Republican and top Democratic economist explain why Obama’s economic policies are failing, and offer a common sense blueprint for re-igniting long-term growth and prosperity for all Americans. They show how to overhaul the tax system, increase business investment, slash government spending, control entitlements, and even rebuild American manufacturing.

*How to House the Homeless*

Ingrid Gould Ellen and Brendan O’Flaherty (editors)
(Russell Sage Foundation Publications, June 2010)

With a keen eye on the big picture of housing policy, *How to House the Homeless* shows what works and what doesn’t in reducing the numbers of homeless and reaching those most at risk. The book critically reassesses where we are now, analyzes the most promising policies and programs going forward, and offers a new agenda for future research.

*Mismeasuring Our Lives: Why GDP Doesn’t Add Up*

Joseph E. Stiglitz, Amartya Sen, and Jean-Paul Fitoussi
(The New Press, May 2010)

*Mismeasuring Our Lives* is the result of this major intellectual effort, one with pressing relevance for anyone engaged in assessing how and whether our economy is serving the needs of our society. The authors offer a sweeping assessment of the limits of GDP as a measurement of the well-being of societies, and introduces a bold new array of concepts, from sustainable measures of economic welfare, to measures of savings and wealth, to a “green GDP.” At a time when policymakers worldwide are grappling with unprecedented global financial and environmental issues, here is an essential guide to measuring the things that matter.

*Handbook of Monetary Economics vols 3A+3B (Handbooks in Economics)*

Benjamin M. Friedman and Michael Woodford
(North Holland, December 15, 2010)

In addition to their investigations of new tools, models, and assumptions, the authors look carefully at recent evidence on subjects as varied as price-setting, inflation persistence, the private sector’s formation of inflation expectations, and the monetary policy transmission mechanism. They also reexamine standard presumptions about the rationality of asset markets and other fundamentals.
The work of Cristian Pop-Eleches focuses largely around issues of fertility, HIV/AIDS, and education in the developing world. His work has been featured in The New York Times, The Economist, and even the book Freakonomics, among numerous other news outlets. But his research on the relation between computer access and academic achievement has proven to yield a fascinating outcome, one that has captured much attention and excitement throughout the world of education policy in recent months.

His recent paper with Ofer Malamud, entitled “Home Computer Use and the Development of Human Capital” (NBER Working Paper #15814) delves into a question of obvious immediacy. While individuals with higher income tend to have computers at home and tend to perform better at school than those of low income with less access, is there a true causal link between computer access and improved academic performance?

A number of developing countries, including Brazil, Uruguay, Peru and Colombia, have used subsidized programs to supply poorer households with personal computers, based on the assumption that computer access will lead to better performance from students. Yet there is startlingly little evidence for this assumption, and it is quite possible that a simple income effect can account for the difference between the performance of higher-income students (who tend to have much greater access to computers) and lower-income students (who have much less access).

Accordingly, to isolate the effects of computers on academic achievement, Pop-Eleches and Malamud exploited a specific program called Euro 200, administered by the Romanian Ministry of Education, in which the Ministry gave out approximately 35,000 vouchers toward the purchase of a home computer in 2008. The voucher program boosted the likelihood of households owning a home computer by more than 50 percent, and led to increased computer use, as one would expect.

Yet, while children in families that received a voucher scored significantly higher on tests that measured computer skills and cognitive ability than those that did not receive a voucher, they in fact had significantly lower outcomes for all other academic measures – a startling finding. In particular, children in families that received a voucher received significantly lower grades in math, English, and Romanian than their counterparts without vouchers. The findings, elaborated in their forthcoming article on the same topic in the Quarterly Journal of Economics, concluded that “providing home computers to low-income children in Romania lowered academic achievement even while it improved their computer skills and cognitive ability.”

In interpreting their evidence, Pop-Eleches and Malamud point out that computer access reduced time spent doing homework, watching television, and reading. They speculate on causes, describing how few parents or children in the study reported having educational software installed on the computer, and few children reported using the computer for any particular educational purposes. Moreover, they write, the computer games that were installed on the computers provided were the primary activity children reported engaging in when using the computer, thus serving more as a distraction than an educational tool. They conclude, “Nevertheless, taken as a whole, these results are consistent with the persistence of long-term negative effects on academic achievement, and positive long-term effects on cognitive ability and computer skills.”

Encouragingly, however, the co-authors found that rules set by parents on computer use can help improve some of the negative effects of having a computer in the home. They found that parents that had a rule limiting computer use tended to negatively affect the benefits of increased computer skills but had no effect on improving grades. However, they found that if parents had a rule that enforced certain times to do homework, it tended to reduce the computer’s negative effect on grades without reducing the benefits of increased computer skills and cognitive ability. These findings have broad implications for education policy, for subsidized computer programs in the developing world, and for parenting strategies designed to improve children’s performance in school, which is a central reason why this line of research from Pop-Eleches and Malamud is generating so much interest in so many different quarters.
This year the Barnard-Columbia Team geared up for a serious effort to compete in the Fed Challenge Championship. They met weekly and prepared seriously for the competition, held annually by The Federal Reserve Bank of New York.

Questions such as, “What is the right monetary policy when the Fed’s benchmark interest rate is at zero?,” “Will the so-called ‘QE2’ work or is it pushing on a string?,” and “Does a larger Fed balance sheet complicate exit strategies?“ are ones faced by the Federal Reserve Governors constantly in recent times. But they are the same ones Barnard and Columbia students were faced with in their qualifying round on November 8.

In the highly competitive competition, the Barnard-Columbia team acted as the Federal Open Market Committee, making and defending a monetary policy recommendation before a panel of three judges comprised of Federal Reserve and academic economists. The competition has always been challenging, but the financial crisis has increased the demand on students’ knowledge as they must now consider unconventional monetary policy tools as well.

Oren Benzaquen, a Columbia University senior and member of the Barnard-Columbia team, also participated in last year’s competition. “The big catch phrase at the time was that we are starting to see some ‘green shoots’”, he said. “There was no real question that interest rates were not going to be moving for an extended period of time.”

Lloyd Bromberg, the College Fed Challenge’s coordinator and creator of its high school predecessor, said that teams are more prepared than ever. “As a result of the financial crisis, teams are much more versed in the many new programs developed by the Fed,” states Bromberg.

The Challenge was launched first as a high school initiative in 1995 by the Federal Reserve Bank of New York. “We saw a crucial need for students at the high school level to accurately learn about how the Fed makes and implements monetary policy,” says Bromberg. That was followed in 2002 by the first College Fed Challenge in New York. A team of undergraduate business students from New York University’s Stern school won that inaugural contest over teams from Barnard-Columbia, Pace, and SUNY Buffalo.

Interest in the competition has expanded significantly. Last year, 25 colleges and 110 high schools competed for the 2nd District crown and the opportunity to go to the Board of Governors in Washington, D.C., to vie for the national championship. This year, 35 colleges entered the qualifying rounds.

While the Barnard-Columbia team prepared diligently and thoroughly throughout this past semester, the competition was fierce, and the team did not make it into the final round. However, the judges praised the Barnard-Columbia team for its efforts, giving a range of highly positive feedback. The year’s preparations are not in vain, as next year will surely prove an opportunity to redouble efforts.

While the event may not receive much press, the competitors’ increased knowledge about the economy and the Federal Reserve will likely help the students land interviews in a difficult job market. Benzaquen, an economics major, sees only positives to competing in the Fed Challenge: deeper understanding of monetary policy and the U.S. economy, the fun of competition, and the ability to speak intelligently on monetary policy when interviewing. These will all ensure the development and extension of skills already taught in Columbia and Barnard Economics, and will prepare these undergraduates for a lifetime of engagement in real-world economic issues.
Ph.D. candidates Anukriti Sharma (top) and Petra Persson (bottom) won the Vickrey Prize for their third-year papers in 2010. Sharma’s study examines the effects of financial incentives on sterilization rates, fertility outcomes and sex ratio. Sharma uses evidence from Devirupak scheme which was implemented in Haryana (a northern state of India) in 2002. Under this scheme, couples who adopt a terminal method of family planning are entitled to receive a monthly payment for a period of 20 years. The magnitude of this monetary transfer varies by the number and sex composition of a couple’s existing children. Using a triple difference strategy, Sharma finds that the effect of financial incentives on rate of sterilization is significantly positive. This increase is entirely driven by the bottom 40% of the wealth distribution for whom the likelihood of getting sterilized has increased by 21 - 31%. Sex ratio has increased overall as well as among those who are sterilized. Since the monetary benefit from two girls is the same as from one boy, this unintended consequence suggests that the net value added from having a boy (relative to a girl) is more than the resulting net loss of incentive payment. The effect on fertility is puzzling. Overall, the effect is significantly positive, but for the subset of sterilized couples, parity at sterilization has fallen significantly. Results from the panel data set of births suggest that the overall probability of a female birth has significantly improved. But this increase hides significant heterogeneity by birth order, wealth and land ownership status of the household.

Persson’s third-year paper, entitled “Competition for Attention,” studies an individual’s decision-making when she is faced with competing information providers who demand her attention, which is scarce. The paper shows that more abundant information may lead to information overload; as it becomes harder to identify relevant information sources, attention is wasted on processing information of lesser quality, and decision-quality deteriorates. Moreover, an information provider can divert attention away from relevant information by strategically flooding the individual with useless information. These insights shed light on how competing actors who can provide information can hamper individual decision-making. The analysis points to how restructuring the information environment could help improve key economic decisions, such as the choice of school, doctor, or pension savings plan.


Maya Rossin and Miguel Morin tied this year for the Harriss prize for second-year papers. Rossin’s winning paper is titled “The Effects of Maternity Leave on Children’s Birth and Infant Health Outcomes in the United States,” and evaluates the impacts of unpaid maternity leave provisions of the 1993 Family and Medical Leave Act (FMLA) on children’s birth and infant health outcomes in the United States.

Morin’s paper is titled “An Empirical Bayesian Approach to Decision Theory,” and accounts for ambiguity aversion in the estimation of risk aversion. Morin’s paper also measures the coefficient of absolute ambiguity aversion, as introduced by Klibanoff et al. (2005), finding that the estimates are very accurate in most of the cases, and encourage further econometric models that relax the simplifying assumptions.

Nicolas Crouzet was the runner-up.

Lesley Turner received a dissertation grant from the American Educational Research Association’s Grants Program (sponsored by the National Science Foundation). Her proposal was titled “Do colleges practice price discrimination? Implications for access and affordability.”

Wilfredo Lim recently published an article in the Journal of Health Economics (Issue 29, 2010, pages 630-640), along with co-authors Franque Grimard and Sonia Lazlo at McGill University. The paper, entitled “Health, aging and childhood socio-economic conditions in Mexico,” investigates the long-term effects of childhood socio-economic conditions on the health of the elderly in Mexico. The authors utilize a panel of individuals aged 50 and above from the Mexican Health and Aging Survey and find that the conditions under which the individual lived at the age of 10 affect health in old age, even accounting for education and income.

The Wueller Teaching Award winners for 2009-2010 were announced; Giovanni Paci won for Principles, Christine Pal for Micro, Macro and Econometrics, Petra Persson for Electives category, and Minkee Song for the Graduate category.
OCTOBER 20
Banking on the Future: The Fall and Rise of Central Banking
Address by Howard Davies, Director, London School of Economics
Low Library Rotunda, 6 p.m.

OCTOBER 25
The Political Economy of Universities
Professor Anton Muscatelli, President, University of Glasgow
Faculty House, Garden Room 1, 4:30 – 5:45 p.m.

NOVEMBER 29
Arrow Lecture: Speculation, Trading, and Bubbles
José Scheinkman, with discussants Patrick Bolton and Sandy Grossman
Low Library Faculty Room, 6 p.m.
Co-sponsored by the Committee on Global Thought and Columbia University Press

DECEMBER 1
In the Aftermath of the Financial Crisis: Toward a New Framework for Monetary Policy
Jacques de Larosière
Low Library Rotunda, 6 p.m.
Co-Sponsored by Maison Française and the Jerome Chazen Institute of Columbia Business School

DECEMBER 7
Mismeasuring Our Lives: Why GDP Doesn’t Add Up
Kirk Hamilton, Alan B. Krueger, Glenn-Marie Lange, Juliet B. Schor and Joseph Stiglitz
Presidential Room, Faculty House, 6:15 p.m.
Co-sponsored by the Committee on Global Thought, Demos and The New Press