EUGENE FAMA AWARDED 2013 NOBEL PRIZE IN ECONOMICS

‘A great day for Chicago economics’

University of Chicago professors Eugene F. Fama and Lars Peter Hansen have been awarded the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2013.

The Royal Swedish Academy of Sciences honored Fama and Hansen, along with Robert J. Shiller of Yale University, “for their empirical analysis of asset prices.” This research helps to explain how and why the prices of stocks and bonds change over time. Fama’s work demonstrated that new information is very quickly incorporated into the market, making it difficult to predict short-term changes in asset prices. Hansen developed a statistical method for testing rational theories of asset pricing like those advanced by Fama and Shiller.

“In their work, Gene Fama and Lars Hansen have demonstrated the university’s mission to address the complex challenges facing society with innovative scholarship. In doing so, they have helped shape the study of economics and the nature of today’s financial markets. We are very gratified to see those accomplishments recognized internationally and proud to count them among the Nobel laureates at the University of Chicago,” said Robert J. Zimmer, president of the University of Chicago.

Fama is the Robert R. McCormick Distinguished Service Professor of Finance at the University of Chicago Booth School of Business. He is among the 89 scholars associated with the university to receive Nobel Prizes, and among the 28 who have received the Nobel Memorial Prize in Economic Sciences. In addition to Fama and Hansen, four current faculty members are Nobel laureates in economics: Profs. Roger Myerson (who won in 2007), James Heckman (2000), Robert E. Lucas Jr. (1995), and Gary Becker (1992).

Merton Miller, in whose memory (along with Eugene Fama) Fama-Miller Center for Research in Finance was established, was awarded the Nobel Prize in 1990 for his pioneering work in the theory of financial economics.

Excerpt from an October 2013 article by Susie Allen
In June 2013, Jason Kang joined Fama-Miller Center as a student research assistant. In September 2013, Hongcen Wei accepted a full-time position as a Fama-Miller Center research professional. In January 2014, Gerardo Manzo accepted a full-time position as a Fama-Miller Center research professional. Hongcen Wei will leave Fama-Miller Center in July to begin a PhD program in Economics at the University of Chicago.

The Fama-Miller Center continues to acquire cutting-edge data subscriptions for the University of Chicago Booth School of Business faculty and students. Since May, 2013, Fama-Miller Center has acquired 13 data subscriptions, seven of these available on a limited basis due to user licensing agreements. The goal of Fama-Miller Center is to obtain data related to financial research. The data center infrastructure continues to grow and improve.

In addition to providing research support through the acquisition of data, Fama-Miller Center provides assistance in contract and subscription negotiations that benefit Chicago Booth faculty and students.

The Fama-Miller Center continues to expand our research assistance program to provide research support to Booth finance faculty. The goal of this program is to foster a synergistic relationship between the faculty and research assistant. The research assistant provides research assistance while the faculty member provides valuable mentoring to the research assistant. Fama-Miller Center currently has two full-time research professionals and two part-time research assistants. Fama-Miller Center’s second research professional hired as a result of this program, Hongcen Wei, will leave Fama-Miller Center in July to begin a PhD program in economics at the University of Chicago.

Fama-Miller Center welcomes research professionals Xian (Philip) Xu in August and Paul Matsiras in September.
The Fama-Miller Center budget was developed and approved for fiscal year 2014-15. Research accounts for current funding have been created.

Thank you to our alumni and friends who supported Fama-Miller Center during the period from May 1, 2013 to June 30, 2014.

David Booth and Suzanne Deal Booth, John and Serena Liew, Mac and Leslie McQuown and the DeTang Foundation provide continued support to Fama-Miller Center.

In August 2013, a gift was presented to Fama-Miller Center by Christian Leuz and Claudia Roeder-Leuz.

In November 2013, a gift was presented to Fama-Miller Center by Eugene F. Fama and Sallyann Dimeco Fama.

In December 2013, a gift was presented to Fama-Miller Center by Eugene F. Fama.

In December 2013, a gift was presented to Fama-Miller Center by R. David Kretschmer and Maria Emilia Pippo-Kretschmer.

A call for proposals was sent to faculty and PhD students in September, 2013 and January, 2014. Proposals were reviewed and recommended for funding by Fama-Miller Center directors Douglas Diamond and John Cochrane and independent board members Steven Kaplan, Tobias Moskowitz, and Robert Vishny. Deputy dean for faculty John Heaton approved funding of 24 research projects and one conference. Faculty members and PhD students submitting proposals were notified of the board's decision in November 2013 and April/May 2014. Funding was awarded for the proposals listed in the tables on pages 6-7.

The Fama-Miller Center website (research.ChicagoBooth.edu/famamiller) was redesigned in early 2014 and is updated continuously.


The Fama-Miller Center continues to host the weekly Finance Faculty Workshop, Finance Lunch Seminar, and PhD Brown Bag. The Finance Faculty Workshop provides a forum for paper presentations by Booth and visiting professors; the Finance Lunch Seminar provides a forum for paper presentations by Booth faculty, visiting professors, and Booth job-market PhD students; the PhD Brown Bag provides a forum for paper presentation by Booth PhD Students.
The charts on this and the following page show a comparison of total funding requested/total funding awarded, total funding requested by faculty/PhD students, and total funding awarded to faculty/PhD students for each funding cycle.

Comparison of Total Funding Requested/Total Funding Awarded Each Cycle

Comparison of Total Funding Requested by Faculty/PhD Students Each Cycle
Comparison of Total Funding Awarded to Faculty/PhD Students Each Cycle

Total Awarded
Awarded to Faculty
Awarded to PhD Students

0 50000 100000 150000 200000 250000 300000 350000

Mid Cycle 2014 Apr-14 Nov-13 Mid Cycle 2013 Apr-13 Nov-12 Mid Cycle 2012 Apr-12 Nov-11 Mid Cycle 2011 Apr-11 Prior to Apr-11
The tables on this and the following page list the proposals and researchers for projects funded from November 2013 to June 2014.

**Fama-Miller Center for Research in Finance Funding Mid-Cycle 2014**

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Researcher(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidity and Correlation</td>
<td>John Shim, Chicago Booth PhD student</td>
</tr>
<tr>
<td>Price Discovery in the Municipal Bond Market</td>
<td>Anna Costello, MIT, Regina Wittenberg-Moerman, Chicago Booth, Frank Zhou, Chicago Booth PhD student</td>
</tr>
<tr>
<td>The Revolving Doors and Worker Flows in Banking Regulation</td>
<td>David Lucca, Federal Reserve Board of New York, Amit Seru, Chicago Booth, Francesco Trebbi, University of British Columbia</td>
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**Fama-Miller Center for Research in Finance Funding April 2014**

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Researcher(s)</th>
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<tbody>
<tr>
<td>The Idiosyncratic Volatility Puzzle: A Reassessment at High Frequency</td>
<td>Ilze Kalnina, Université de Montréal, Yuan Liao, University of Maryland, Yacine Ait-Sahalia, Princeton, Dacheng Xiu, Chicago Booth</td>
</tr>
<tr>
<td>International Macro Finance Conference</td>
<td>Tarek Hassan, Loukas Karabarbounis, Chicago Booth, Matteo Maggiori, Harvard, Brent Neiman, Chicago Booth</td>
</tr>
<tr>
<td>Shareholder Democracy in Play: Career Consequences of Proxy Contests</td>
<td>Vyacheslav Fos, University of Illinois at Urbana-Champaign, Margarita Tsoutsoura, Chicago Booth</td>
</tr>
<tr>
<td>Chinese Mutual Funds</td>
<td>Yeguang Chi, Chicago Booth PhD student</td>
</tr>
<tr>
<td>Cross-sectional and Time-varying Dependence in Volatility at Different Time Horizons</td>
<td>Yeguang Chi, Chicago Booth PhD student, Yongning Wang, Chicago Booth PhD student</td>
</tr>
<tr>
<td>Chinese Stock Market Returns</td>
<td>Chen Edward Wang, Chicago Booth PhD student</td>
</tr>
<tr>
<td>Supply Chain Network Structure and Systematic Risk</td>
<td>Jing Wu, Chicago Booth PhD student</td>
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</table>

**Fama-Miller Center for Research in Finance Funding Mid-Cycle 2013**

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Researcher(s)</th>
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</thead>
<tbody>
<tr>
<td>Short Interest. Time-series firm-specific measure of constraints.</td>
<td>Mark Maffett, Chicago Booth</td>
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</tbody>
</table>
# Fama-Miller Center for Research in Finance Funding November 2013

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Researcher(s)</th>
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<tbody>
<tr>
<td>Top Executive Circumstances</td>
<td>Steven Kaplan, Chicago Booth, Morten Sorensen, Columbia Business School</td>
</tr>
<tr>
<td>Can Relationship Banking Exacerbate Bank Liquidity Spirals?</td>
<td>Kelly Shue, Chicago Booth, Richard Townsend, Tuck School of Business</td>
</tr>
<tr>
<td>Economic Rents in the Arab Spring</td>
<td>Daron Acemoglu, MIT, Tarek Hassan, Chicago Booth, Ahmed Tahoun, London Business School</td>
</tr>
<tr>
<td>Currency Wars</td>
<td>Tarek Hassan, Chicago Booth, Thomas Mertens, New York University</td>
</tr>
<tr>
<td>Housing and the Rise of the Investor</td>
<td>Amir Sufi, Chicago Booth</td>
</tr>
<tr>
<td>Interest Rates, Collateral Value, and Household Spending</td>
<td>Amir Sufi, Chicago Booth</td>
</tr>
<tr>
<td>Financial Sector Development and Structural Transformation</td>
<td>Paula Bustos, Centre de Recerca en Economia Internacional, Bruno Caprettini,</td>
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<td></td>
<td>Universitat Pompeu Fabra, Jacopo Ponticelli, Chicago Booth</td>
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<tr>
<td>Long Run Discount Rates</td>
<td>Stefano Giglio, Chicago Booth, Matteo Maggiori, New York University Stern School of Business, Johannes Stroebel, New York University Stern School of Business</td>
</tr>
<tr>
<td>Tax Evasion across Industries: Soft Credit Evidence from Greece</td>
<td>Nikolaos Artavanis, Virginia Tech PhD student, Adair Morse, University of</td>
</tr>
<tr>
<td></td>
<td>California-Berkeley, Margarita Tsoutsoura, Chicago Booth</td>
</tr>
<tr>
<td>The Effect of Relationship Lending: Evidence from Loan Originations and Renegotiations</td>
<td>Robert Bushman, University of North Carolina, Kenan-Flagler, Regina Wittenberg-Moerman, Chicago Booth</td>
</tr>
<tr>
<td>Reading Group on Issues in Corporate Finance and Banking</td>
<td>Amit Seru, Chicago Booth</td>
</tr>
<tr>
<td>Identifying Riskiness in Lending Due to the Community Reinvestment Act</td>
<td>Amit Seru, Chicago Booth</td>
</tr>
<tr>
<td>Risk Sharing Through Debt</td>
<td>Nitish Kumar, Chicago Booth PhD student</td>
</tr>
<tr>
<td>Precautionary Maturity Management in Corporate Bond Market</td>
<td>Qiping Xu, Chicago Booth PhD student</td>
</tr>
</tbody>
</table>
Wei Xiong, professor of economics, Princeton University in September and October 2013 as our inaugural visiting scholar. Professor Xiong visited Chicago Booth from September 29 to October 4 and from October 14 to 19. At the October 1 Finance Workshop, Professor Xiong presented the following:

This paper develops a model with a tractable log-linear equilibrium to analyze the effects of informational frictions in commodity markets. By aggregating dispersed information about the strength of the global economy among goods producers whose production has complementarity, commodity prices serve as price signals to guide producers’ production decisions and commodity demand. Our model highlights important feedback effects of informational noise originating from supply shocks and futures market trading on commodity demand and spot prices. Our analysis illustrates the weakness of a common practice in empirical studies of commodity markets of assuming that different types of shocks are publicly observable to market participants.
FAMA-MILLER SPONSORED EVENTS

Black-Scholes 40 Years and Counting: The Value of Flexibility

On April 22, 2014, Fama-Miller Center for Research in Finance proudly presented a talk by Myron Scholes, Frank E. Buck Professor of Finance, Emeritus, Stanford Graduate School of Business, former Booth faculty member and Nobel laureate 1997. Professor Scholes discussed “Black-Scholes 40 years and counting: the value of flexibility.”

Professor Scholes was introduced by Eugene Fama, Robert R. McCormick Distinguished Service Professor of Finance, University of Chicago Booth School of Business and Nobel laureate 2013.

A Q&A session followed the talk. A short reception followed the Q&A.

MYRON SCHOLES
Frank E. Buck Professor of Finance, Emeritus Stanford Graduate School of Business Former Chicago Booth Faculty Member, Nobel Laureate 1997

What Really is Smart Beta?

On May 19, 2014, Fama-Miller Center proudly presented a talk by George U. “Gus” Sauter, former chief investment officer, Vanguard Mutual Funds, senior consultant, Vanguard, and executive in residence, The University of Chicago Booth School of Business, Winter Quarter 2014. Mr. Sauter’s talk was entitled, “What Really is Smart Beta?”

As an executive in residence at Chicago Booth, Mr. Sauter mentored students, participated as a guest lecturer, and worked with the faculty of the school.

Mr. Sauter joined Vanguard in 1987, and from 1987 to 2003 he was head of Vanguard’s Equity Investment Group and was responsible for the development of Vanguard’s index and active quantitative portfolio management. From 2003 to 2012, he served as Vanguard’s first chief investment officer, responsible for all of Vanguard’s internal portfolio management. This included oversight of approximately $1.75 trillion managed globally by Vanguard Fixed Income and Equity Investment Groups. From 1996 to 2012, he was also a member of the CEO’s 10-member senior staff, which managed the company’s operations and developed the business strategy. Mr. Sauter retired at the end of 2012 and is currently a senior consultant to Vanguard.

GEORGE U. “GUS” SAUTER
Former Chief Investment Officer Vanguard Mutual Funds Senior Consultant, Vanguard Executive in Residence, The University of Chicago Booth School of Business, Winter Quarter 2014
Conference in Honor of Milton Harris
October 25, 2013 Gleacher Center

On October 25, 2013, the University of Chicago Booth School of Business, Fama-Miller Center for Research in Finance and The Applied Theory Initiative welcomed attendees to the Conference in Honor of Milton Harris, professor emeritus of finance and economics, held at Chicago Booth Gleacher Center.

The conference celebrated Harris’s work and brought together colleagues and friends to present papers on topics related to his past and present research areas.

International Macro Finance Conference
December 6-7, 2013 Gleacher Center

On December 6-7, 2013, the University of Chicago Booth School of Business, Fama-Miller Center for Research in Finance welcomed attendees to the International Macro Finance Conference held at Chicago Booth Gleacher Center.

The International Macro Finance Conference was intended to get together a small group of faculty working at the intersection of international finance and international macro to discuss early stage research in an informal setting.

Conference organizers: Tarek Hassan, Loukas Karabarbounis, and Brent Neiman of the University of Chicago Booth School of Business and Matteo Maggiori of New York University Stern School of Business.
FAMA-MILLER CENTER FUNDED RESEARCH

GREGOR MATVOS
Associate Professor of Finance

AMIT SERU
Professor of Finance

Resource Allocation within Firms and Financial Market Dislocation: Evidence from Diversified Conglomerates

When external capital markets are stressed they may not reallocate resources between firms. We show that resource allocation within firms’ internal capital markets provides an important force countervailing financial market dislocation. Using data on US conglomerates, we empirically verify that firms shift resources between industries in response to shocks to the financial sector. We estimate a structural model of internal capital markets to separately identify and quantify the forces driving the reallocation decision and illustrate how these forces interact with external capital market stress. The frictions in internal capital markets drive a large wedge between productivity and investment: the weaker (stronger) division obtains too much (little) capital, as though it is 12 (nine) percent more (less) productive than it really is. The cost of accessing external capital funds quadruples during extreme financial market dislocations, making resource allocation within firms significantly cheaper. The estimated model allows us to simulate the propagation of the 2007/2008 financial market dislocation. The counterfactual out of sample simulated data is remarkably consistent with the actual data and shows that improved resource allocation in internal capital markets offset financial market stress during the recent financial crisis by 16-30 percent relative to firms with no internal capital markets.
We (with Atif Mian and Kamalesh Rao) investigate the consumption consequences of the 2006-09 housing collapse using the highly unequal geographic distribution of wealth losses across the United States. We estimate a large elasticity of consumption with respect to housing net worth of 0.6 to 0.8, which soundly rejects the hypothesis of full consumption risk-sharing. The average marginal propensity to consume (MPC) out of housing wealth is five to seven cents with substantial heterogeneity across zip codes. Zip codes with poorer and more levered households have a significantly higher MPC out of housing wealth. In line with the MPC result, zip codes experiencing larger wealth losses, particularly those with poorer and more levered households, experience a larger reduction in credit limits, refinancing likelihood, and credit scores. Our findings highlight the role of debt and the geographic distribution of wealth shocks in explaining the large and unequal decline in consumption from 2006 to 2009.

We (with Nikolaos Artavanis and Adair Morse) begin with the new observation that banks lend to tax-evading individuals based on the bank’s perception of true income. This insight leads to a novel approach to estimate tax evasion from private-sector adaptation to semiformality. We use household microdata from a large bank in Greece and replicate bank models of credit capacity, credit card limits, and mortgage payments to infer the bank’s estimate of individuals’ true income. We estimate a lower bound of 28 billion euros of unreported income for Greece. The foregone government revenues amount to 31 percent of the deficit for 2009. Primary tax-evading occupations are doctors, engineers, private tutors, accountants, financial service agents, and lawyers. Testing the industry distribution against a number of redistribution and incentive theories, our evidence suggests that industries with low paper trail and industries supported by parliamentarians have more tax evasion. We conclude by commenting on the property right of informal income.
We (with Hui Chen, Rui Cui, and Konstantin Milbradt) develop a structural credit risk model with time-varying macroeconomic risks and endogenous liquidity frictions. The model not only matches the average default probabilities, recovery rates, and average credit spreads for corporate bonds across different credit ratings, but also can account for bond liquidity measures including Bond-CDS spreads and bid-ask spreads across ratings. We propose a novel structural decomposition scheme of the credit spreads to capture the interaction between liquidity and default risks in corporate bond pricing, and find that these interaction terms account for about 25-40 percent of observed credit spreads. As an application, we use this framework to quantitatively evaluate the effects of liquidity-provision policies for the corporate bond market, and do a time-series decomposition from 1994 onwards.

**Quantifying Liquidity and Default Risks of Corporate Bonds over the Business Cycle**

**Political Uncertainty and Risk Premia**

We develop a general equilibrium model of government policy choice in which stock prices respond to political news. The model implies that political uncertainty commands a risk premium whose magnitude is larger in weaker economic conditions. Political uncertainty reduces the value of the implicit put protection that the government provides to the market. It also makes stocks more volatile and more correlated, especially when the economy is weak. We find empirical evidence consistent with these predictions.
We (with Rui Mano) decompose violations of uncovered interest parity into a cross-currency, a between-time-and-currency, and a cross-time component. We show that most of the systematic violations are in the cross-currency dimension. By contrast, we find no statistically reliable evidence that currency risk premia respond to deviations of forward premia from their time- and currency-specific mean. These results imply that the forward premium puzzle (FPP) and the carry-trade anomaly are separate phenomena that may require separate explanations. The carry trade is driven by static differences in interest rates across currencies, whereas the FPP appears to be driven primarily by cross-time variation in all currency risk premia against the US dollar. Models that feature two symmetric countries thus cannot explain either of the two phenomena. Once we make the appropriate econometric adjustments we also cannot reject the hypothesis that the elasticity of risk premia with respect to forward premia in all three dimensions is smaller than one. As a result, currency risk premia need not be correlated with expected changes in exchange rates.

Forward and Spot Exchange Rates in a Multi-Currency World

TAREK ALEXANDER HASSAN
Associate Professor of Finance and Economics and Neubauer Family Faculty Fellow

The High-Frequency Trading Arms Race: Frequent Batch Auctions as a Market Design Response

WINNER, 2014 AQR INSIGHT AWARD

We (with Peter Cramton and John Shim) argue that the continuous limit order book is a flawed market design and propose that financial exchanges instead use frequent batch auctions: uniform-price sealed-bid double auctions conducted at frequent but discrete time intervals, e.g., every 1 second. Our argument has four parts. First, we use millisecond-level direct-feed data from exchanges to show that the continuous limit order book market design does not really “work” in continuous time: market correlations completely break down at high-frequency time horizons. Second, we show that this correlation breakdown creates frequent technical arbitrage opportunities, available to whomever is fastest, which in turn creates an arms race to exploit such opportunities. Third, we develop a simple new theory model motivated by these empirical facts. The model shows that the arms race is not only socially wasteful – a prisoner’s dilemma built directly into the market design – but moreover that its cost is ultimately borne by investors via wider spreads and thinner markets. Last, we show that frequent batch auctions eliminate the arms race, both because they reduce the value of tiny speed advantages and because they transform competition on speed into competition on price. Consequently, frequent batch auctions lead to narrower spreads, deeper markets, and increased social welfare.

ERIC BUDISH
Associate Professor of Economics and Neubauer Family Faculty Fellow
We (with Dante Amengual) introduce downward volatility jumps into a general non-affine modeling framework of the term structure of variance. With variance swaps and S&P returns, we find that downward volatility jumps are associated with a resolution of policy uncertainty, in particular through statements from Federal Open Market Committee meetings and speeches of the Federal Reserve chairman. We also find that such jumps are priced with positive risk premia, which reflect the price of the “put protection” ordered by the Federal Reserve. Ignoring downward volatility jumps may lead to an exaggeration of the negative total variance risk premia, hence a biased-interpretation of the price of tail events. We also find variance risk premia tend to be insignificant or even positive at the inception of crises. On the modeling side, we explore the structural differences and relative goodness-of-fits of factor specifications and find that a log-volatility model with two Ornstein-Uhlenbeck factors and two-sided jumps are superior in capturing the volatility dynamics and pricing variance swaps.
We empirically analyze the pricing of political uncertainty, guided by a theoretical model of government policy choice. To isolate political uncertainty, we exploit its variation around major political events, namely, national elections and global summits. We find that political uncertainty is priced in the equity option market in ways predicted by the theory. Options whose lives span political events tend to be more expensive. Such options provide valuable protection against the risk associated with political events, including not only price risk but also variance and tail risks. This protection is more valuable in a weaker economy as well as amid higher political uncertainty.
We (with Matteo Maggiori and Johannes Stroebel) provide direct estimates of how agents trade off immediate costs and uncertain future benefits that occur in the very long run, 100 or more years away. We exploit a unique feature of housing markets in the United Kingdom and Singapore, where residential property ownership takes the form of either leaseholds or freeholds. Leaseholds are temporary, pre-paid, and tradable ownership contracts with maturities between 99 and 999 years, while freeholds are perpetual ownership contracts. The difference between leasehold and freehold prices reflects the present value of perpetual rental income starting at leasehold expiry, and is thus informative about very long-run discount rates. We estimate the price discounts for varying leasehold maturities compared to freeholds and extremely long-run leaseholds via hedonic regressions using proprietary datasets of the universe of transactions in each country. Agents discount very long-run cash flows at low rates, assigning high present values to cash flows hundreds of years in the future. For example, 100-year leaseholds are valued at more than 10 percent less than otherwise identical freeholds, implying discount rates below 2.6 percent for 100-year claims. Given the riskiness of rents, this suggests that both long-run risk-free discount rates and long-run risk premia are low. We show how the estimated very long-run discount rates are informative for climate change policy.

We (with Robert Davidson and Ayesha Dey) examine how executives’ behavior outside the workplace, as measured by their ownership of luxury goods (low “frugality”) and prior legal infractions, is related to financial reporting risk. We predict and find that CEOs and CFOs with a legal record are more likely to perpetrate fraud. In contrast, we do not find a relation between executives’ frugality and the propensity to perpetrate fraud. However, as predicted, we find that unfrugal CEOs oversee a relatively loose control environment characterized by relatively high and increasing probabilities of other insiders perpetrating fraud and unintentional material reporting errors during their tenure. Further, cultural changes associated with an increase in fraud risk are more likely during unfrugal (vs. frugal) CEOs’ reign, including the appointment of an unfrugal CFO, an increase in executives’ equity-based incentives to misreport, and a decline in measures of board monitoring intensity.
The Role of the Media in Disseminating Insider Trading News

We (with Jonathan Rogers) use the disclosure of insiders’ trades to investigate whether the way in which news is disseminated by the media affects the market response. To do this, we use recent changes in the disclosure rules governing insider trades and an exogenous change in media coverage to cleanly identify media effects. Using high-resolution intraday data and a plausibly exogenous change in media coverage, we find clear media effects in the price and volume response to news. These results help resolve open questions regarding the importance of investor inattention and help explain why apparently “second hand” news affects securities prices.

DOUGLAS J. SKINNER
Eric J. Gleacher Distinguished Service Professor of Accounting

SARAH ZECHMAN
Associate Professor of Accounting

Technological Innovation, Resource Allocation, and Growth

We (with Leonid Kogan, Dimitris Papanikolaou and Noah Stoffman) explore the role of technological innovation as a source of economic growth by constructing direct measures of innovation at the firm level. We combine patent data for US firms from 1926 to 2010 with the stock market response to news about patents to assess the economic importance of each innovation. Our innovation measure predicts productivity and output at the firm, industry and aggregate level. Furthermore, capital and labor flow away from non-innovating firms towards innovating firms within an industry. There exists a similar, though weaker, pattern across industries. Cross-industry differences in technological innovation are strongly related to subsequent differences in industry output growth.

AMIT SERU
Professor of Finance
Using a proprietary dataset, we (with Leslie Robinson and Jonathan Rogers) investigate whether the degree of international diversification affects firm value for US multinational corporations (MNCs). Our analyses offer robust evidence that organizing a set of otherwise independent activities within a multinational network results in a value premium, relative to a benchmark portfolio of independent firms operating in the same country-industry footprint as the MNC. We also examine frictions and economic forces that plausibly give rise to this value premium and find forces related to equity market segmentation, exposure to various legal environments, and cost containment strategies affect the advantage of MNCs, relative to local competitors.
Although there has been substantial growth in the use of formal risk management systems, there is minimal empirical evidence of their benefits. To evaluate the effectiveness of risk management, we (with Gavin Cassar) investigate the methods that hedge funds use to manage risk and their performance outcomes. Consistent with risk management practices reducing left-tail risk, funds in our sample that use formal models performed significantly better in the extreme down months of 2008. We find no evidence that having a dedicated head of risk management is associated with reduced left-tail risk. Funds employing VaR had more accurate expectations of how they would perform in a short-term equity bear market.

Does Risk Management Work?

Using prices of both S&P 500 options and recently introduced VIX options, we (with Zhaogang Song) study asset pricing implications of volatility risk. While pointing out the joint pricing kernel is not identified nonparametrically, we propose model-free estimates of marginal pricing kernels of the market return and volatility conditional on the VIX. We find that the pricing kernel of market return exhibits a decreasing pattern given either a high or low VIX level, whereas the unconditional estimates present a U-shape. Hence, stochastic volatility is the key state variable responsible for the U-shape puzzle documented in the literature. Finally, our estimates of the volatility pricing kernel feature a U-shape, implying that investors have high marginal utility in both high and low volatility states.

A Tale of Two Option Markets: Pricing Kernels and Volatility Risk
We (with Sumit Agarwal, Souphala Chomsisengphet and Johannes Stroebel) analyze the effectiveness of consumer financial regulation by considering the 2009 Credit Card Accountability Responsibility and Disclosure (CARD) Act in the United States. Using a difference-in-differences research design and a unique panel data set covering over 160 million credit card accounts, we find that regulatory limits on credit card fees reduced overall borrowing costs to consumers by an annualized 1.7 percent of average daily balances, with a decline of more than 5.5 percent for consumers with FICO scores below 660. Consistent with a model of low fee salience and limited market competition, we find no evidence of an offsetting increase in interest charges or a reduction in volume of credit, although we are unable to analyze longer-run effects on investments or industry structure. Taken together, we estimate that the CARD Act fee reductions have saved US consumers $12.6 billion per year. We also analyze the CARD Act requirement to disclose the interest savings from paying off balances in 36 months rather than only making minimum payments. We find that this “nudge” increased the number of account holders making the 36-month payment value by 0.5 percentage points on a base of 5.7 percent.

The financial crisis renewed interest in the potential for pay-for-performance compensation to affect managerial risk-taking. We (with Richard Townsend) examine whether paying top executives with stock options induces them to take more risk. To identify the causal effect of options, we exploit two distinct sources of variation in option compensation that arise from institutional features of multi-year grant cycles. We find that a 10 percent increase in the value of new options granted leads to a 2-6 percent increase in firm equity volatility. This increase in risk is driven largely by an increase in leverage. We also find that an increase in stock options leads to lower dividend growth, with mixed effects on investment and firm performance.

KELLY SHUE
Assistant Professor of Finance and Neubauer Family Faculty Fellow

NEALE MAHONEY
Assistant Professor of Economics and Neubauer Family Faculty Fellow

Swinging for the Fences: Executive Reactions to Quasi-Random Option Grants

Regulating Consumer Financial Products: Evidence from Credit Cards
We build a class of copula models that captures time-varying dependence across large panels of financial assets. Our models nest Gaussian, Student’s t, grouped Student’s t, and generalized hyperbolic copulas with time-varying correlations matrices, as special cases. We introduce time-variation into the densities by writing them as factor models with stochastic loadings. The proposed copula models have flexible dynamics and heavy tails yet remain tractable in high dimensions due to their factor structure. Our Bayesian estimation approach leverages a recent advance in sequential Monte Carlo methods known as particle Gibbs sampling which can draw large blocks of latent variables efficiently and in parallel. We use this framework to model an unbalanced, 200-dimensional panel consisting of credit default swaps and equities for 100 US corporations. Our analysis shows that the grouped Student’s t stochastic copula is preferred over seven competing models.
Advertising Expensive Mortgages

We (with Umit Gurun) use a unique dataset that combines information on advertising and mortgages originated by subprime lenders to study whether advertising helped consumers find cheaper mortgages. Lenders who advertise more within a region sell more expensive mortgages, measured as the excess rate of a mortgage after accounting for a broad set of borrower, contract, and regional characteristics. These effects are stronger for mortgages sold to less sophisticated consumers. We exploit variation in mortgage advertising induced by the entry of Craigslist across different regions as well as a battery of other tests to demonstrate that the relation between advertising and mortgage expensiveness is not spurious. Our estimates imply that consumers pay on average $7,500 more when borrowing from a lender who advertises. Analyzing advertising content reveals that initial/introductory rates are advertised frequently in a salient fashion in contrast to reset rates, which are rarely advertised. Moreover, the advertised price is at best uncorrelated with mortgage expensiveness. Our facts reject the canonical models of informative advertising and are instead more consistent with persuasion models, in which the reset rate is shrouded/not salient and advertising is used to steer unsophisticated consumers into bad choices by increasing the salience of the initial interest rate.
We (with Adair Morse) examine the performance and holdings of 2,818 asset managers who market over 44,000 investment products, representing $35 trillion in assets under management as of 2012. In aggregate, investors paid $267 billion in fees to asset managers in 2011, comprising the second largest securities investing component of Philippon’s (2013) cost of financial intermediation. On a net return basis, asset managers break even relative to strategy benchmarks, and outperform by 1% relative to asset class benchmarks. Performance is not random across asset managers. Boutique managers demonstrate security selection skill. Consistent with Berk and Green (2004), gross performance is positively correlated with fees. We also find that the relation between idiosyncratic performance and asset flows attenuates in manager size, suggesting that large asset managers ameliorate their clients’ career concerns.
Increased Correlation Among Asset Classes: Are Volatility or Jumps to Blame, or Both?

We (with Yacine Ait-Sahalia) develop estimators and asymptotic theory to decompose the quadratic covariation between two assets into its continuous and jump components, in a manner that is robust to the presence of market microstructure noise. Using high frequency data on different assets classes, we find that the recent financial crisis led to an increase in both the quadratic variations of the assets and their correlations. However, we find little evidence to suggest a change between the relative contributions of the Brownian and jump components, as both comove. Co-jumps stem from surprising news announcements that occur primarily before the opening of the US market and are also accompanied by an increase in Brownian-driven correlations.

Shareholder Democracy in Play: Career Consequences of Proxy Contests

This paper shows that proxy contests have a significant adverse effect on careers of incumbent directors. Following a proxy contest, directors experience a significant decline in number of directorships not only in the targeted company, but also in other non-targeted companies. The results are established using the universe of all proxy contests during 1996-2010. To establish that this effect of proxy contests is causal, we (with Vyacheslav Fos) use within-firm variation in directors’ exposure to proxy contests and exploit the predetermined schedule of staggered boards that only allows a fraction of directors to be nominated for election every year. We find that nominated directors relative to non-nominated ones lose 45 percent more seats on other boards. We discuss that this pattern can be expected if proxy contest mechanism imposes a significant career cost on incumbent directors.
Too-Systemic-to-Fail: What Option Markets Imply About Sector-Wide Government Guarantees

Winner of the Glucksman Prize
Winner, Best Paper on Financial Institutions and Markets, 2012 WFA Annual Meeting

We (with H. Lustig and S. Van Nieuwerburgh) examine the pricing of financial crash insurance during the 2007–09 financial crisis in U.S. option markets. A large amount of aggregate tail risk is missing from the price of financial sector crash insurance during the financial crisis. The difference in costs of out-of-the-money put options for individual banks and puts on the financial sector index increases fourfold from its pre-crisis 2003–07 level. We provide evidence that a collective government guarantee for the financial sector, which lowers index put prices far more than those of individual banks, explains the divergence in the basket-index put spread.

BRYAN T. KELLY
Associate Professor of Finance and the Richard N. Rosett Faculty Fellow
LOOKING FORWARD

STAFFING

During the next year, Fama-Miller Center expects to hire one additional research professional to support the finance faculty.

FAMA-MILLER CENTER VISITING SCHOLAR

The Fama-Miller Center will host Professor Adi Sunderam, Harvard Business School, as a visiting scholar during Autumn Quarter, 2014.

DATA CENTER

The Fama-Miller Center will acquire, organize, and maintain new data for research as new research is funded.

OTHER SUPPORT

In December, 2014, Fama-Miller Center will host a two-day International Macro Finance Conference at University of Chicago Booth School of Business Gleacher Center.