From July 2019 through June 2020, the Fama-Miller Center for Research in Finance provided funding for 23 research projects, five academic conferences, and two Fama-Miller Center Visitors.

Since July 2019, the Fama-Miller Center has renewed 20 data subscriptions and acquired 16 new datasets.

Zhiguo He, Fuji Bank and Heller Professor of Finance, and Lubos Pastor, Charles P. McQuaid Professor of Finance and Robert King Steel Faculty Fellow, served as co-directors of the Fama-Miller Center.

Thank you to our alumni and friends who supported the Fama-Miller Center during the period from July 1, 2019 to June 30, 2020, including Mac and Leslie McQuown; Thomas H. Batten, ’12; Eugene Fama, PhD ’64; Constance M. Frydenlund, ’87; Deborah Hilibrand, ’79; W. Theodore Kuck, ’73; Christopher Ryan, ’07; and Andrew Younger Wong, BS ’96, MBA ’02, PhD ’02.

Yann Decressin, Pranav Garg, Sanhitha Jugulum, and Julien Weber, joined the center’s research professional program to provide research support to Booth finance faculty. Four of the center’s current research professionals, Huan (Bianca) He, Dong Ryeol Lee, Tianshu Lyu, and Jun Xu will enter PhD programs at Chicago Booth (finance), UCLA (finance), Yale School of Management (finance), and University of Washington Foster School of Business (finance) in fall 2020.

The Fama-Miller Center staff and research professionals working remotely.
A call for proposals was sent to Chicago Booth faculty and PhD students in September 2019 and May 2020. The co-directors, Zhiguo He and Lubos Pastor, met with the members of the board of directors, Steven Kaplan and Robert Vishny, to review the proposals and make recommendations for funding to the Deputy Dean for Faculty Pietro Veronesi. Dean Veronesi approved funding for 23 research projects, five conferences, and two Fama-Miller Center Visitors. Funding was awarded for the proposals listed in the tables on the following page.

The charts to the right show a comparison of total funding requested versus total funding awarded; total funding requested by faculty and PhD students; and total funding awarded to faculty and PhD students for the period of July 2019 through June 2020.
Comparison of Total FundingRequested/Total FundingAwarded Each Cycle

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

Comparison of Total Funding Awarded to Faculty/PhD Students Each Cycle
These tables show the projects funded from July 2019 through June 2020. The names of the researchers working on the projects are also listed.

### November 2019

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Researchers</th>
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<tbody>
<tr>
<td>Rising from the Ashes: Fallen Angel Corporate Bond Price Recovery Post-Downgrade and Dealer Inventory Dynamics</td>
<td>Rayhan Momin, Chicago Booth Finance PhD</td>
</tr>
<tr>
<td></td>
<td>Jessica Li, Chicago Booth MBA</td>
</tr>
<tr>
<td>Disclosure of Supervisory Actions and Deposit Volatility</td>
<td>Anya Kleymenova, Chicago Booth</td>
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<tr>
<td></td>
<td>Rimmy Tomy, Chicago Booth</td>
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<tr>
<td>BDC Research</td>
<td>Young Soo Jang, Chicago Booth Finance PhD</td>
</tr>
<tr>
<td>Household Debt Contracts and Income Volatility: Evidence from Fintechs</td>
<td>Agustin Hurtado, Chicago Booth Finance PhD</td>
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<td></td>
<td>Adair Morse, UC Berkeley</td>
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<td></td>
<td>Daniel Keniston, LSU</td>
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<tr>
<td>Creditor Discrimination and the Desegregation of Public Schools</td>
<td>John Heilbron, Chicago Booth Finance PhD</td>
</tr>
<tr>
<td>Commonality in Credit Spread Changes: Dealer Inventory and Intermediary Distress</td>
<td>Zhiguo He, Chicago Booth</td>
</tr>
<tr>
<td></td>
<td>Zhaogang Song, Johns Hopkins</td>
</tr>
<tr>
<td>Data Purchase: S&amp;P Leveraged Commentary &amp; Data (LCD) and Capital IQ Access through WRDS</td>
<td>Yueran Ma, Chicago Booth</td>
</tr>
<tr>
<td>Household Finance Conference, March or April 2020</td>
<td>Pascal Noel, Chicago Booth</td>
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<tr>
<td></td>
<td>Constantine Yannelis, Chicago Booth</td>
</tr>
<tr>
<td>FMC Visitor: Harold James, Princeton</td>
<td>Anil Kashyap, Chicago Booth</td>
</tr>
<tr>
<td>FMC Visitor: Giorgia Piacentino, Columbia</td>
<td>Yueran Ma, Chicago Booth</td>
</tr>
<tr>
<td>Add’l Funding: Why Do Borrowers Default on Mortgages? Evidence from High-Frequency Data</td>
<td>Pascal Noel, Chicago Booth</td>
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<tr>
<td></td>
<td>Peter Ganong, University of Chicago Harris School</td>
</tr>
<tr>
<td>Add’l Funding: Labor and Finance Conference (Sept. 2019)</td>
<td>Constantine Yannelis, Chicago Booth</td>
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</table>

### Midcycle 2020

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Researchers</th>
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<tbody>
<tr>
<td>News Analytics via Machine Learning</td>
<td>Dacheng Xiu, Chicago Booth</td>
</tr>
<tr>
<td>Corporate Taxes and Retail Prices</td>
<td>Constantine Yannelis, Chicago Booth</td>
</tr>
<tr>
<td></td>
<td>Scott R. Baker, Northwestern University, Kellogg</td>
</tr>
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<td></td>
<td>Stephen Teng Sun, City University of Hong Kong</td>
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## PROPOSAL

<table>
<thead>
<tr>
<th>PROPOSAL</th>
<th>RESEARCHERS</th>
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<tbody>
<tr>
<td>Big G</td>
<td>• Michael Weber, Chicago Booth&lt;br&gt;• Ernesto Pasten, Central Bank of Chile&lt;br&gt;• Raphael Schoenle, Brandeis</td>
</tr>
<tr>
<td>Are Intermediaries a Veil? Evidence from Fund Managers’ Partisan Disagreement During the Coronavirus Crash</td>
<td>• Blair Vorsatz, Chicago Booth Finance PhD</td>
</tr>
<tr>
<td>Default and Mortgage Market Consequences of the Pandemic</td>
<td>• Joseph Vavra, Chicago Booth</td>
</tr>
<tr>
<td>Sustainable Investing: Empirical Tests</td>
<td>• Lubos Pastor, Chicago Booth&lt;br&gt;• Lucian Taylor, Wharton&lt;br&gt;• Rob Stambaugh, Wharton</td>
</tr>
<tr>
<td>Social Inflation</td>
<td>• Sangmin Oh, Joint PhD Program in Financial Economics</td>
</tr>
<tr>
<td>Subjective Risk Premia</td>
<td>• Stefan Nagel, Chicago Booth</td>
</tr>
<tr>
<td>Fifty Shades of QE: Career Concerns of Central Bankers</td>
<td>• Elisabeth Kempf, Chicago Booth</td>
</tr>
<tr>
<td>Effects of the COVID-19 Crisis on Stock Market Beliefs and Investment Decisions</td>
<td>• Samuel Hartzmark, Chicago Booth&lt;br&gt;• Abigail Sussman, Chicago Booth&lt;br&gt;• Jennifer Trueblood, Vanderbilt</td>
</tr>
<tr>
<td>How Does Individual and Household Borrowing Respond to Marriage and Divorce?</td>
<td>• Benedict Guttman-Kenney, Chicago Booth Economics PhD</td>
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<tr>
<td>Demand for Stocks</td>
<td>• Emanuele Colonnelli, Chicago Booth&lt;br&gt;• Niels Gormsen, Chicago Booth</td>
</tr>
<tr>
<td>Noise Trader and the Limits to Arbitrage: Evidence from Taiwan Financial Transaction Tax Reform</td>
<td>• Ching-Tse Chen, Chicago Booth Finance PhD</td>
</tr>
<tr>
<td>The Impact of the Shadow Banking Sector on Public Finance</td>
<td>• Charles Boyer, Joint PhD Program in Financial Economics&lt;br&gt;• Kelly Posenau, Chicago Booth Finance PhD</td>
</tr>
<tr>
<td>Asset Pricing Conference 2020</td>
<td>• Niels Gormsen, Chicago Booth&lt;br&gt;• Samuel Hartzmark, Chicago Booth&lt;br&gt;• Michael Weber, Chicago Booth</td>
</tr>
<tr>
<td>Conference on Beliefs and Expectations in Business Decision Making (March 2021)</td>
<td>• Nicholas Bloom, Stanford&lt;br&gt;• Steve Davis, Chicago Booth&lt;br&gt;• Yueran Ma, Chicago Booth</td>
</tr>
<tr>
<td>Chicago Household Finance Conference (Oct/Nov 2020)</td>
<td>• Scott Nelson, Chicago Booth&lt;br&gt;• Pascal Noel, Chicago Booth&lt;br&gt;• Constantine Yannelis, Chicago Booth</td>
</tr>
<tr>
<td>Financial Consequences of the COVID-19 Crisis Conference (Oct 2020)</td>
<td>• Stefan Nagel, Chicago Booth</td>
</tr>
<tr>
<td>Add’l Funding: Rising from the Ashes: Fallen Angel Corporate Bond Price Recovery Post-Downgrade and Dealer Inventory Dynamics</td>
<td>• Rayhan Momin, Chicago Booth Finance PhD&lt;br&gt;• Jessica Li, Chicago Booth MBA</td>
</tr>
</tbody>
</table>
Monetary Policy in the Next Recession?

In many advanced countries, lowering the policy rate to zero probably will be insufficient to counter the next recession. We (Kashyap and coauthors Stephen G. Cecchetti, Michael Feroli, Catherine L. Mann, and Kermit L. Schoenholtz) explore a range of new monetary policy (NMP) tools including forward guidance, balance sheet tools, and negative interest rates. Reflecting the complex transmission of monetary policy, we examine each NMP’s impact on financial conditions indexes (FCIs) in eight advanced economies. We find: (1) the global component of financial conditions is quite important; (2) state-contingent forward guidance is the tool most associated with improved conditions; (3) policymakers typically implemented NMPs during stress periods, and this endogenous usage pattern makes any econometric assessment difficult; (4) NMPs generally were not sufficient to overcome the headwinds already present. This leads us to conclude that, while central bankers should work to incorporate NMP tools into their reaction function, they should be humble about their likely effectiveness.
Quantifying the High-Frequency Trading “Arms-Race”: A Simple New Methodology and Estimates

We (Budish and coauthors Matteo Aquilina and Peter O’Neill) use stock exchange message data to quantify the negative aspect of high-frequency trading, known as “latency arbitrage.” The key difference between message data and widely-familiar limit order book data is that message data contain attempts to trade or cancel that fail. This allows the researcher to observe both winners and losers in a race, whereas in limit order book data you cannot see the losers, so you cannot directly see the races. We find that latency-arbitrage races are very frequent (about one per minute per symbol for FTSE 100 stocks), extremely fast (the modal race lasts 5–10 millionths of a second), and account for a large portion of overall trading volume (about 20 percent). Race participation is concentrated, with the top six firms accounting for over 80 percent of all race wins and losses. Most races (about 90 percent) are won by an aggressive order as opposed to a cancel attempt; market participants outside the top 6 firms disproportionately provide the liquidity that gets taken in races (about 60 percent). Our main estimates suggest that eliminating latency arbitrage would reduce the market’s cost of liquidity by 17 percent and that the total sums at stake are on the order of $5 billion annually in global equity markets.

A Theory of Stock Exchange Competition and Innovation: Will the Market Fix the Market?

This paper builds a new model of financial exchange competition, tailored to the institutional details of the modern US stock market. In equilibrium, exchange trading fees are competitive but exchanges are able to earn economic profits from the sale of speed technology. We (Budish and coauthors Robin S. Lee and John J. Shim) document stylized facts consistent with these results. We then use the model to analyze incentives for market design innovation. The novel tension between private and social innovation incentives is incumbents’ rents from speed technology in the status quo. This creates a disincentive to adopt new market designs that eliminate latency arbitrage and the high-frequency trading arms race.
Liquidity and the Structure of Intermediation

In the run up to the financial crisis, the essential functions financial intermediaries played seemed to become less important. Commercial and industrial loans, as well as residential mortgages, the quintessential banking products, were securitized and sold. At the same time, the “skin in the game” intermediaries held in their activities (such as securitizations) diminished, while their leverage increased. Some have suggested these developments stemmed from rising agency problems in the financial sector. Instead, we (Diamond and Rajan with coauthor Yunzhi Hu) attribute them to rising liquidity in real asset markets. Under a variety of circumstances, prospective liquidity tends to enhance firm leverage, which crowds out both internal and external corporate governance as supports to debt. This tends to make debt returns more skewed. We develop a general theory of the interaction between intermediary activities, intermediary capital structure, and real asset market liquidity.
Coronavirus: Impact on Stock Prices and Growth Expectations

We use data from the aggregate stock and dividend futures markets to quantify how investors’ expectations about economic growth evolve across horizons in response to the new coronavirus (COVID-19) outbreak and subsequent policy responses until July 2020. Dividend futures, which are claims to dividends on the aggregate stock market in a particular year, can be used to directly compute a lower bound on growth expectations across maturities or to estimate expected growth using a forecasting model. We show how the actual forecast and the bound evolve over time. As of July 20, our forecast of annual growth in dividends points to a decline of 8 percent in both the United States and Japan and a 14 percent decline in the European Union compared to January 1. Our forecast of GDP growth points to a decline of 2 percent in the United States and Japan and 3 percent in the European Union. The lower bound on the change in expected dividends is -17 percent in the United States and Japan and -28 percent in the European Union at the two-year horizon. News about fiscal stimulus around March 24 boosts the stock market and long-term growth but did little to increase short-term growth expectations. Expected dividend growth has improved since April 1 in all geographies.
Commonality in Credit Spread Changes: Dealer Inventory and Intermediary Distress

Two intermediary-based factors—a broad financial distress measure and a dealer corporate bond inventory measure—explain about 50 percent of the puzzling common variation of credit spread changes beyond canonical structural factors. A simple model, in which intermediaries facing margin constraints absorb supply of assets from customers, accounts for the documented explanatory power and delivers further implications with empirical support. First, whereas bond sorts on margin-related variables (credit rating and leverage) produce monotonic patterns in loadings on intermediary factors, non-margin-related sorts (e.g., trading volume) produce no pattern. Second, dealer inventory co-moves with corporate-credit assets only, whereas intermediary distress co-moves even with non-corporate-credit assets. Third, dealers’ inventory increases, and bond prices decline, in response to instrumented bond sales by institutional investors, using severe downgrades (“fallen angels”) and disaster-related insurance losses as IVs. (He with coauthors Paymon Khorrami and Zhaogang Song)

Pledgeability and Asset Prices: Evidence from the Chinese Corporate Bond Markets

We (He with coauthors Hui Chen, Zhuo Chen, Jingyu Liu, and Rengming Xie) provide causal evidence for the value of asset pledgeability. Our empirical strategy is based on a unique feature of the Chinese corporate bond markets, where bonds with identical fundamentals are simultaneously traded on two segmented markets that feature different rules for repo transactions. We utilize a policy shock on December 8, 2014, which rendered a class of AA+ and AA bonds ineligible for repo on one of the two markets. By comparing how bond prices changed across markets and rating classes around this event, we estimate that an increase in the haircut from 0 to 100 percent would result in an increase in bond yields in the range of 40 to 83 bps. These estimates help us infer the magnitude of the shadow cost of capital in China.
Treasury Inconvenience Yields during the COVID-19 Crisis

In sharp contrast to most previous crisis episodes, the Treasury market experienced severe stress and illiquidity during the COVID-19 crisis, raising concerns that the safe-haven status of US Treasuries may be eroding. We (He and Nagel with coauthor Zhaogang Song) document large shifts in Treasury ownership during this period and the accumulation of Treasury and reverse repo positions on dealer balance sheets. To understand the pricing consequences, we build a model in which balance sheet constraints of dealers and demand/supply shocks from habitat agents determine the term structure of Treasury yields. A novel element of our model is the inclusion of levered investors’ repo financing as part of dealers’ intermediation activities. Both direct holdings of Treasuries and reverse repo positions of dealers are subject to a regulatory balance sheet constraint. According to the model, Treasury inconvenience yields, measured as the spread between Treasuries and overnight-index swap (OIS) rates, as well as spreads between dealers’ reverse repo and repo rates, should be increasing in dealers’ balance sheet costs. Consistent with model predictions, we find that both spreads are large and positive during the COVID-19 crisis. We further show that the same model, adapted to the institutional setting in 2007–09, also helps explain the opposite signs of repo spreads and Treasury convenience yields during the financial crisis.
Market Efficiency in the Age of Big Data

Modern investors face a high-dimensional prediction problem: thousands of observable variables are potentially relevant for forecasting. We (Nagel with coauthor Ian Martin) reassess the conventional wisdom on market efficiency testing in light of this fact. In our model economy, N assets have cash flows that are a linear function of J firm characteristics, but with uncertain coefficients. Risk-neutral Bayesian investors impose shrinkage (ridge regression) or sparsity (Lasso) when they estimate the J coefficients of the model and use them to price assets. In equilibrium, when J is comparable in size to N, returns appear cross-sectionally predictable using firm characteristics to an econometrician who analyzes data from the economy ex post. A factor zoo emerges even without p-hacking and data-mining. Standard in-sample tests of market efficiency reject the no-predictability null with high probability, despite the fact that investors optimally use the information available to them in real time. In contrast, out-of-sample tests retain their economic meaning.

Labor Reactions to Credit Deterioration: Evidence from LinkedIn Activity

We (Jeffers with coauthors Jeff Gortmaker and Michael Lee) examine workers’ reactions to signals of their firms’ credit deterioration using anonymized networking activity on LinkedIn. We show significant increases in weekly connection formation following the announcement of a negative credit watch. More senior and more skilled workers have the strongest reactions, and increased connection activity appears for both workers who leave and workers who stay at the firm. Positive credit news and non-credit economic news like missed earnings do not trigger similar changes in networking activity. Our results appear consistent with a precautionary motive for networking.
Observing Enforcement: Evidence from Banking

We find that the public disclosure of regulators’ supervisory actions changes their enforcement behavior. Using a novel sample of enforcement actions and orders (EDOs) and the setting of the 1989 Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA), which required public disclosure of EDOs, we find that US banking regulators issue more EDOs, intervene sooner, and rely more on publicly observable signals after the disclosure regime change. The content of EDOs also changes, with documents becoming more complex and boilerplate. We show that EDOs disclosure affects regulators’ behavior over and above other changes that occurred around FIRREA. Taken together, our results suggest regulators respond to the increased public scrutiny of their actions.
Secured Credit Spreads

Lenders are unwilling to accept lower credit spreads for secured debt relative to unsecured debt when a firm is healthy. However, they accept significantly lower credit spreads for secured debt when a firm’s credit quality deteriorates, the economy slows, or average credit spreads widen. This contingent valuation of collateral or security, coupled with the borrower perceiving a loss of operational and financial flexibility when issuing secured debt, may explain why firms issue secured debt on a contingent basis; they issue more when their credit quality deteriorates, the economy slows, and average credit spreads widen. (Rajan with coauthors Efraim Benmelech and Nitish Kumar)

The Decline of Secured Debt

We (Rajan with coauthors Efraim Benmelech and Nitish Kumar) document a steady decline in the share of secured debt issued (as a fraction of total corporate debt) in the United States over the twentieth century, with some pickup in this century. Superimposed on this secular trend, the share of secured debt issued is countercyclical. The secular decline in the issuance of collateralized debt seems to result from creditors acquiring greater confidence over time that the priority of their debt claims will be respected even if they do not obtain security up front. Borrowers also do not seem to want to lose financial and operational flexibility by giving security up front. Instead, security is given on a contingent basis—when a firm approaches distress. Similar arguments explain why debt is more likely to be secured in the down phase of a cycle than in the up phase, thus accounting for the cyclicality of secured debt share.
Kill Zone

We (Rajan and Zingales with coauthor Krishna Kamepalli) study why high-priced acquisitions of entrants by an incumbent do not necessarily stimulate more innovation and entry in an industry (like that of digital platforms) where customers face switching costs and enjoy network externalities. The prospect of an acquisition by the incumbent platform undermines early adoption by customers, reducing prospective payoffs to new entrants. This creates a “kill zone” in the space of startups, as described by venture capitalists, where new ventures are not worth funding. Evidence from changes in investment in startups by venture capitalists after major acquisitions by Facebook and Google suggests this is more than a mere theoretical possibility.
RESEARCH PAPERS POSTED IN 2019–20

Indebted Demand

We (Sufi with coauthors Atif Mian and Ludwig Straub) propose a theory of indebted demand, capturing the idea that large debt burdens by households and governments lower aggregate demand, and thus natural interest rates. At the core of the theory is the simple yet under-appreciated observation that borrowers and savers differ in their marginal propensities to save out of permanent income. Embedding this insight in a two-agent overlapping-generations model, we find that recent trends in income inequality and financial liberalization lead to indebted household demand, pushing down natural interest rates. Moreover, popular expansionary policies—such as accommodative monetary policy and deficit spending—generate a debt-financed short-run boom at the expense of indebted demand in the future. When demand is sufficiently indebted, the economy gets stuck in a debt-driven liquidity trap, or debt trap. Escaping a debt trap requires consideration of less standard macroeconomic policies, such as those focused on redistribution or those reducing the structural sources of high inequality.

The Saving Glut of the Rich

Rising income inequality since the 1980s in the United States has generated a substantial increase in saving by the top of the income distribution, which we (Sufi with coauthors Atif Mian and Ludwig Straub) call the saving glut of the rich. The saving glut of the rich has been as large as the global saving glut, and it has not been associated with an increase in investment. Instead, the saving glut of the rich has been linked to the substantial dissaving and large accumulation of debt by the non-rich. Analysis using variation across states shows that the rise in top income shares can explain almost all of the accumulation of household debt held as a financial asset by the household sector. Since the Great Recession, the saving glut of the rich has been financing government deficits to a greater degree.
“Big G” typically refers to aggregate government spending on a homogeneous good. In this paper, we (Weber with coauthors Lydia Cox, Gernot J. Müller, Ernesto Pasten, and Raphael Schoenle) open up this construct by analyzing the entire universe of procurement contracts of the US government and establish five facts. First, government spending is granular, that is, it is concentrated in relatively few firms and sectors. Second, relative to private expenditures its composition is biased. Third, procurement contracts are short-lived. Fourth, idiosyncratic variation dominates the fluctuation of spending. Last, government spending is concentrated in sectors with relatively sticky prices. Accounting for these facts within a stylized New Keynesian model offers new insights into the fiscal transmission mechanism: fiscal shocks hardly impact inflation, little crowding out of private expenditure exists, and the multiplier tends to be larger compared to a one-sector benchmark aligning the model with the empirical evidence.

**Forward Guidance and Household Expectations**

We (Weber and coauthors Olivier Coibion, Dimitris Georgarakos, and Yuriy Gorodnichenko) compare the causal effects of forward guidance communication about future interest rates on households’ expectations of inflation, mortgage rates, and unemployment to the effects of communication about future inflation in a randomized controlled trial using more than 25,000 US individuals in the Nielsen Homescan panel. We elicit individuals’ expectations and then provide 22 different forms of information regarding past, current, and/or future inflation and interest rates. Information treatments about current and next year’s interest rates have a strong effect on household expectations but treatments beyond one year do not have any additional impact on forecasts. Exogenous variation in inflation expectations transmits into other expectations. The richness of our survey allows us to better understand how individuals form expectations about macroeconomic variables jointly and the non-response to long-run forward guidance is consistent with models in which agents have constrained capacity to collect and process information.

**Exposure to Grocery Prices and Inflation Expectations**

We (Weber and coauthors Francesco D’Acunto, Ulrike Malmendier, and Juan Ospina) show that, when forming expectations about aggregate inflation, consumers rely on the prices of goods in their personal grocery bundles. Our analysis uses novel representative micro data that uniquely match individual expectations, detailed information about consumption bundles, and item-level prices. The data also reveal that the weights consumers assign to price changes depend on the frequency of purchase, rather than expenditure share, and that positive price changes loom larger than similar-sized negative price changes. Prices of goods offered in the same store but not purchased (any more) do not affect inflation expectations, nor do other dimensions such as the volatility of price changes. Our results provide empirical guidance for models of expectations formation with heterogeneous consumers.
Managing Households’ Expectations with Unconventional Policies

With a binding effective lower bound on interest rates and large government deficits, conventional policies are unviable and policymakers resort to unconventional policies, which target households’ expectations directly. Using unique micro data and a difference-in-differences strategy, we (Weber and coauthors Francesco D’Acunto and Daniel Hoang) assess the effectiveness of unconventional fiscal policy and forward guidance, both of which aim to stimulate consumption via raising households’ inflation expectations. All households’ inflation expectations and spending plans react to unconventional fiscal policy. Instead, households, contrary to experts, do not react to forward guidance. We argue that policies aiming to affect households directly are ineffective if (non-expert) households do not understand them.

Human Frictions in the Transmission of Economic Policy

We (Weber and coauthors Francesco D’Acunto, Daniel Hoang, and Maritta Paloviita) document that a large fraction of a representative population of men—those below the top of the distribution by cognitive abilities (IQ)—barely reacts to measures of monetary and fiscal policy that aim at influencing their leverage and durable spending decisions. To the contrary, high-IQ men respond to these measures in line with policy makers’ assumptions. Heterogeneity in observables such as income, education levels, economic expectations, or financial constraints do not drive these patterns. Our unique microdata include administrative information on cognitive abilities, economic expectations, consumption and borrowing plans, as well as actual debt levels and interest paid by debtholders in Finland. Limited cognitive abilities might represent human frictions in the transmission and effectiveness of fiscal and monetary policies that operate through household borrowing and spending decisions.

IQ, Expectations, and Choice

Forecast errors for inflation decline monotonically with both verbal and quantitative IQ in a large and representative male population. Within individuals, inflation expectations and perceptions are autocorrelated only for men above the median by IQ (high-IQ men). High-IQ men’s forecast revisions are consistent with the diagnostic-expectations framework, whereas anything goes for low-IQ men. Education levels, income, socioeconomic status, or financial constraints do not explain these results. Using ad-hoc tasks in a controlled environment, we (Weber and coauthors Francesco D’Acunto, Daniel Hoang, and Maritta Paloviita) investigate the channels behind these results. Low-IQ individuals’ knowledge of the concept of inflation is low; they associate inflation with concrete goods and services instead of abstract economic concepts, and are less capable of forecasting mean-reverting processes. Differences in expectations formation by IQ feed into choice — only high-IQ men plan to spend more when expecting higher inflation as the consumer Euler equation prescribes. Our results have implications for heterogeneous-beliefs models of consumption, saving, and investment.
Gender Roles and the Gender Expectations Gap

Expectations about macro-finance variables, such as inflation, vary significantly across genders, even within the same household. We (Weber and coauthors Francesco D’Acunto and Ulrike Malmendier) conjecture that traditional gender roles expose women and men to different economic signals in their daily lives, which in turn produce systematic variation in expectations. Using unique data on the contributions of men and women to household grocery chores, their resulting exposure to price signals, and their inflation expectations, we show that the gender expectations gap is tightly linked to participation in grocery shopping. We also document a gender gap in other economic expectations and discuss how it might affect economic choices.

The Propagation of Monetary Policy Shocks in a Heterogeneous Production Economy

Realistic heterogeneity in price rigidity interacts with heterogeneity in sectoral size and input-output linkages in the transmission of monetary policy shocks. Quantitatively, heterogeneity in price stickiness is the central driver for real effects. Input-output linkages and consumption shares alter the identity of the most important sectors to the transmission. Reducing the number of sectors decreases monetary non-neutrality with a similar impact response of inflation. Hence, the initial response of inflation to monetary shocks is not sufficient to discriminate across models and ignoring heterogeneous consumption shares and input-output linkages identifies the wrong sectors from which the real effects originate. (Weber and coauthors Ernesto Pasten and Raphael Schoenle)
How Does Household Spending Respond to an Epidemic? Consumption During the 2020 COVID-19 Pandemic

We (Yannelis and coauthors Scott Baker, R.A. Farrokhnia, Steffen Meyer, and Michaela Pagel) explore how household consumption responds to epidemics, utilizing transaction-level household financial data to investigate the impact of the COVID-19 virus. As the number of cases grew, households began to radically alter their typical spending across a number of major categories. Initially spending increased sharply, particularly in retail, credit card spending, and food items. This was followed by a sharp decrease in overall spending. Households responded most strongly in states with shelter-in-place orders in place by March 29. We explore heterogeneity across partisan affiliation, demographics, and income.

Income, Liquidity, and the Consumption Response to the 2020 Economic Stimulus Payments

In response to the ongoing COVID-19 pandemic, the US government brought about a collection of fiscal stimulus measures: the 2020 CARES Act. Among other provisions, this Act directed cash payments to households. We (Yannelis and coauthors Scott Baker, R.A. Farrokhnia, Steffen Meyer, and Michaela Pagel) analyze households’ spending responses using high-frequency transaction data. We also explore heterogeneity by income levels, recent income declines, and liquidity. We find that households respond rapidly to receipt of stimulus payments, with spending increasing by $0.25-$0.35 per dollar of stimulus during the first 10 days. Households with lower incomes, greater income drops, and lower levels of liquidity display stronger responses. Liquidity plays the most important role, with no observed spending response for households with high levels of bank account balances. Relative to the effects of previous economic stimulus programs in 2001 and 2008, we see much smaller increases in durables spending and larger increases in spending on food, likely reflecting the impact of shelter-in-place orders and supply disruptions. We hope that our results inform the current debate about appropriate policy measures.

Corporate Taxes and Retail Prices

We (Yannelis and coauthors Scott Baker and Stephen Sun) study the impact of corporate taxes on barcode-level product prices, using linked survey and administrative data. Our empirical strategy exploits the dichotomy between the location of production and the location of sales, providing estimates free from the confounding demand shocks. We find significant effects of corporate taxes on prices with a net-of-tax elasticity of 0.17. The effects are larger for lower-price items and products purchased by low-income households and weaker for high-leverage firms. Approximately 31 percent of corporate tax incidence falls on consumers, suggesting that models used by policymakers significantly underestimate the incidence of corporate taxes on consumers.
Human Capital Depreciation

Human capital can depreciate over time if skills are unused, and such depreciation may be a primary cause of structural duration dependence in non-employment. But measuring human capital depreciation is challenging, as worker skills or output are difficult to measure and less productive workers are more likely to spend time in non-employment. We (Yannelis and coauthors Michael Dinerstein and Rigissa Megalokonomou) overcome these challenges by using new data on teachers’ assignments and their students’ outcomes. In Greece, all education graduates are guaranteed public sector teaching positions; however, positions are typically not immediately available for new graduates. Teachers are thus quasirandomly assigned to waitlists by degree conferral date, generating variation in time spent without formal employment. We find significant losses to output, as a one-year increase in time without formal employment, and the associated forgone experience, leads to a 0.10 student standard deviation (2.2 percent) decline in students’ average test scores in our micro empirical specification and a 0.11 student standard deviation (4.0 percent) decline in a district specification. To understand what channel drives this loss, we control for experience levels and isolate the effect of depreciation. We find that skill depreciation explains the full effect.

Measuring the Impact of Regulation on Firms

This paper introduces a new measure of firm-level regulation. Contrary to the conventional wisdom, we find that more regulation increases labor and capital inputs. Productivity decreases, which is consistent with a model of regulation inducing non-productive investment. We (Yannelis and coauthor Robin Gong) employ two empirical strategies to identify the causal impact of regulation on firms, first, utilizing structural breaks and industry level regulation changes, and second, computing predicted industry level regulation measures as instruments. We conduct an event study using the surprise 2016 US election results. Firms with higher Dodd-Frank exposure exhibited higher returns following an increase in the probability of repeal.

The Consequences of Student Loan Credit Expansions: Evidence from Three Decades of Default Cycles

This paper studies the link between credit availability and student loan repayment using administrative federal student loan data. We (Yannelis and coauthor Adam Looney) demonstrate that policy-driven changes in credit available to high-default institutions explains almost all of the historical time series variation in defaults. Between 1981 and 1988, eligibility for federal loans was expanded, leading to the entry of institutions with borrowers more likely to default. From 1988 to 1992, credit access was tightened, leading to the exit of many institutions with high default rates. After 1992, the cycle was repeated, with credit access gradually loosened by unwinding many of the pre-1992 reforms.
PUBLISHED AND FORTHCOMING PAPERS FROM FAMA-MILLER CENTER SUPPORT 2019–20

Published Papers


**Forthcoming Papers**


Liew Fama-Miller Fellowships are awarded to PhD students in the Chicago Booth finance program and the Joint Program in Financial Economics based on merit, overall performance, or seminar papers.

Yiran Fan  
John Heilbron  
Federico Mainardi  
Benjamin Marrow  
Kelly Posenau  
Yang Su  
Matthew (Blair) Vorsatz
The Fama-Miller Research Professional Development Fellowship recognizes one outstanding entering third- or fourth-year Chicago Booth Finance or Joint Program in Financial Economics PhD student per year. The Fama-Miller Research Professional Development Fellow is expected to lead the weekly Fama-Miller Center research professional seminar (held on Fridays from late September to early June), guiding the research professionals’ discussion during the seminar and providing feedback to the presenter afterward. The fellow is selected among applicants annually by the faculty directors of the Fama-Miller Center, based primarily on academic merit.

The fellowship was awarded to Yiran Fan, a rising fourth-year Chicago Booth Joint Program in Financial Economics PhD candidate and former Fama-Miller Center Research Professional. He will serve as a fellow during the academic year 2020–21. Fan’s research interest is mainly on macro finance. He is especially curious about how information frictions would affect financial intermediations’ asset and liability decisions and in turn affect the macroeconomy. For instance, one of his ongoing projects studies how liquidity concerns may distort bankers’ incentives on examining projects’ qualities, and how this may lead to macroeconomic cycles. Fan has worked as a teaching assistant for Lars Hansen, John Heaton, and Stefan Nagel and also worked as a research assistant for George Constantinides, Lars Hansen, Zhiguo He, and Eric Zwick.
RESEARCH EVENTS HOSTED IN 2019–20

European Midwest Micro/Macro Conference
October 17-18, 2019, Gleacher Center

The European Midwest Micro/Macro Conference (EM3C) is an annual conference that focuses on the role of microdata for macroeconomics. Microdata for the purposes of EM3C broadly defined and includes (but is not limited to) survey data, administrative data, experimental data, and expectations data. The macro part of EM3C is also broadly defined and includes growth and business cycle topics, fiscal and monetary policy, consumption, investment, labor topics, price setting, sentiment, and uncertainty research, etc.

This year’s conference was hosted by the Fama-Miller Center for Research in Finance at the University of Chicago Booth School of Business. EM3C is a joint initiative of economists working at the intersection of micro and macro in Europe and the US Midwest. Kurt Mitman (Stockholm University Institute for International Economic Studies and CEPR) was the lead organizer this year and Yueran Ma and Michael Weber (both of Chicago Booth) were the local organizers.
Asset Pricing Conference  
**October 24-25, 2019, Gleacher Center**

In October, the Fama-Miller Center for Research in Finance at Chicago Booth and the Macro Finance Research Initiative within the Becker Friedman Institute welcomed attendees to the Chicago Booth Asset Pricing Conference held at the Gleacher Center. Every year this conference assembles a small group of faculty working at the frontier of asset pricing to discuss early-stage research in an informal setting. The conference also features a poster session of graduate students from around the United States presenting their recent research pertaining to asset pricing and substantive applications.

This year the conference organizers were: Niels Gormsen, Lars Peter Hansen, Samuel Hartzmark, and Michael Weber of Chicago Booth.

Chicago Household Finance Conference  
**March 6, 2020, Gleacher Center**

The Household Finance Conference brings together top junior and senior researchers in the emerging field of household finance. The conference features empirical and theoretic work and topics including, but are not limited to, how households make financial decisions and how lenders ration credit to households.

This year’s conference organizers were: Scott Nelson, Pascal Noel, and Constantine Yannelis of Chicago Booth.
### LOOKING AHEAD

**September 2020**
- The Fama-Miller Center will host a two-day online conference around the theme “Behavioral Approaches to Finance Decision Making.”
- The Fama-Miller Center sends a call for proposals for research funding.

**October 2020**
- The Fama-Miller Center will host a five-day Conference on the Financial Consequences of the COVID-19 Crisis. This conference will be held via video conference.

**November 2020**
- The Fama-Miller Center awards research funding.

**March 2021**
- The Fama-Miller Center will host a conference on Business Expectations: Formation, Properties, and Consequences.
- The Fama-Miller Center sends a call for proposals for research funding.

**April 2021**
- The center sends out the Fama-Miller Research Professional Development Fellowship application for 2021–22.

**May 2021**
- The Fama-Miller Center awards research funding.
POSTPONED

The conferences listed below have been postponed until further notice due to the evolving situation with coronavirus (COVID-19).

- The Fama-Miller Center, along with the Macro Finance Research Program of the Becker Friedman Institute (MFR), plan to host the Chicago Booth Asset Pricing Conference.

- The Fama-Miller Center plan to host the Chicago Household Finance Conference.

- The Fama-Miller Center plan to host the Behavioral Approaches to Financial Decision Making Conference that was originally scheduled for March 2020.