Reflections From MFM 2019 Winter Meeting  
By Allison Schrager

The 2007-2009 financial crisis started a period of reckoning for many economists. The crisis and the recession that followed it ended decades of economic stability, known as the Great Moderation. Prior to the crisis, it was widely believed that with existing macroeconomic policies, advanced economies were largely immune from financial crises. Leading up to the crisis, economists expressed concern about the amount of leverage in the financial system. But they were unaware of the extent of a system wide vulnerability, or the risk that disruptions within the financial sector would spill over to the macroeconomy in a prominent way. And as the years since the crisis have made clear, not only can financial frictions cause major disruptions, they can also change the channels of how macroeconomic policy is supposed to work.

From an intellectual standpoint, it was problematic that financial economists and macroeconomists have traditionally been fairly siloed in their research. In 1984, Stanley Fischer and Robert C. Merton urged researchers to incorporate financial markets into macro models in a more than passive way. And though some progress had been made since then, the 2007-2009 financial crisis proved that these efforts have not come far enough.

The Macro Financial Modeling (MFM) Project endeavors to bridge these gaps by bringing together elite scholars in macro and finance from all over the world, junior scholars at the start of their research careers, policy makers, and leaders from the financial industry. The project is sponsored by the University of Chicago’s Becker Friedman Institute under its Macro Finance Research Program (MFR) in collaboration with MIT’s Laboratory for Financial Engineering. The project is led by Lars Peter Hansen, David Rockefeller Distinguished Service Professor and Director of the MFR Program at the University of Chicago, and Andrew W. Lo, the Charles E. and Susan T. Harris Professor of Finance at the MIT Sloan School of Management.

The aim of the project since its beginning in 2006 has been to enhance macroeconomic models to include how the financial sector influences and poses risks to the economy and to improve economists’ ability to define, measure, and manage financial sector activities. The effort is not purely an academic exercise. Better macro-financial models can improve the tools available to policy makers—such as central banks, which now include financial stability among their priorities and are considering pursuing macroprudential policies. To address these policy objectives without a better understanding of macro-finance linkages is like shooting in the dark. Throughout the years, the MFM project has addressed a wide range of topics including systemic risk measures, intermediary asset pricing, liquidity and segmented markets, comparative valuation dynamics, housing and credit markets, fintech, machine learning and AI, Bitcoin economics, financial crises, and Chinese financial markets. Many of these topics are motivated by the challenges faced by regulators and policy makers. Through regular structured conferences, targeted research support, and disseminating its open access findings on its website, the MFM project has been busy nurturing a community of fruitful engagement and scholarly research.

The MFM project also organized three consecutive MFM Summer Session for Young Scholar camps in 2016, 2017, and 2018, which have served as a model for introducing graduate students and post-doctoral students to cross-disciplinary research at the intersection of macro and finance through structured presentations by established researchers and industry leaders. By organizing these intensive three-day summer camps, the MFM project fostered a network of young scholars who were exposed to frontier research in this area and provided them the opportunity to engage with elite researchers. Some of the elite participants engaged by the MFM project throughout the years include many of the elite executive committee members as well as innovative younger scholars including some with MFM research support. In addition, the project has engaged prominent people from the private and public sectors, including Leo Melamed, CME Group; Tobias Adrian, IMF; Lisa Emsbo-Mattingly, Fidelity; Blu Putnam, CME Group; Laura Kodres, IMF; Tao Wang, UBS; Richard Sandor, American Financial Exchange; and Beverly Hirtle, NY Fed. The MFM camps also provided an opportunity for young scholars to present their own early-career research findings and gain valuable feedback from these established scholars through structured talks and poster presentations.
Additionally, the MFM project has awarded 81 dissertation fellowship awards to exceptional young scholars working at the intersection of macro and finance. Some of these MFM dissertation fellowship awardees presented their findings at MFM events including our recent capstone. Some of these students moved on to work at the World Bank, the International Monetary Fund, the Federal Reserve and other state Federal Reserve banks.

The project has convened regular meetings since 2012 so scholars could present research, discuss and critique macro models that capture aspects of financial markets. The last seven years culminated in a capstone meeting on February 21 and 22 in New York City, featuring presentations about findings from the MFM project’s executive committee members who received MFM funding to pursue innovating work on macroeconomic models with financial sector linkages or related topics in this area. The MFM’s capstone event brought together leading academics, policy makers, and top finance industry executives to acknowledge the advances to date in our understanding and to better appreciate remaining challenges. The papers presented illustrated different ways to incorporate uncertainty and financial frictions into macro models using a variety of different empirical and theoretical approaches.

Credit crisis

Two papers looked at the role of credit.

Chris Sims took an empirical approach to probe a correlation long taken for granted: that credit increases economic growth. This relationship on its surface makes intuitive sense, but is still not well-understood. For example, what conditions must exist for a credit expansion to become contractionary, as it did in 2008? Most macro models assume more credit means more growth, but this is clearly not always true. His paper uses a Vector Autoregression to detangle the relationship between credit expansion and economic growth. His inclusion of real estate prices captures how the macroeconomy responds to various shocks, for example shocks to real estate or commodity prices. He estimates that credit is indeed expansionary. Even in instances when a credit expansion eventually leads to a decline in GDP, the growth that precedes the recession and the recovery that follows suggest that credit is a net positive.

Andrea Prestipino presented a paper co-written with Mark Gertler and Nobuhiro Kiyotaki that develops a model in which banking crises are caused by credit booms. However, as in the data, in their model, many credit booms do not result in banking crises. They use this model to study macroprudential regulation and argue that the cost of a damaging crisis is large enough to justify policies that avoid crises by preventing large credit booms.

Two papers focused on how systemic risk can arise in the credit default swap market. Bernard Herskovic’s paper, which contained a model of systemic risk within the over-the-counter CDS market, demonstrates how, when markets are thin, a single seller of risk that takes on a large position can pose risk to the system. Robert Engle illustrated this hypothesis with a real-life example of a major dealer exiting the market, the Lehman bankruptcy in 2008. By mining bankruptcy records to measure different spreads using bankruptcy, Engle shows how expensive a systemic risk event can be when a major dealer exits the markets.

Previously unseen frictions

Anna Pavlova presented a paper co-written with Anil Kashyap, Natalia Kovrijnykh, and Jian Li that models how benchmarking distorts capital markets. Asset managers are judged based on how they perform relative to their benchmarks, normally an index of similar assets. As a result, corporations included in a benchmark (often firms large enough to be included in the S&P 500) enjoy lower costs of capital because asset managers buy up those companies’ stocks to ensure they don’t underperform the benchmark. Not only could benchmarking distort the price of capital, it could also encourage large firms to take more risk exposure.

Another friction lies in short-term interest rates. Many macro models assume that the short rate is under central bank control. Standard models also assume the short rate influences the macroeconomy through certain channels, such as whether individuals consume or invest and in valuing equity. A paper presented by Moritz Lenel,
co-written with Monika Piazzesi and Martin Schneider, models how and why short rates diverge from the remainder of the term structure, what they call the “short rate disconnect.” Since short-term risk-free assets are mainly held by financial intermediaries that use these assets as collateral, short rates fall when demand for collateral increases—which is exactly what happens towards the end of a credit boom. The existence of the means the channels through which monetary policy operates may also be more complex than standard models predict.

Individual risks

Harald Uhlig presented a paper co-written with Dirk Krüger that introduces idiosyncratic wage risk into a standard neo-classical growth model. They tweak the standard model to accommodate a world in which workers protect themselves against their idiosyncratic labor income risk by buying insurance. The economists derive the conditions, depending on the interest and discount rate, when insurance is optimal. The presence of an insurance market also influences the market rate of interest. The long-term goal is to imbed this structure in DSGE models. This can allow economists to explore worker/firm and banker/borrower relationships more accurately in a DSGE framework, which can help policy makers understand how certain parameters impact the economy in the presence of risk.

Antoinette Schoar’s paper, co-written with John Parker, Duncan Simester, and Maarten Meeuwis, uncovers an example of heterogeneity in investing. Economists generally assume differences in information or risk preferences separate investors. But their paper finds other factors can influence risk taking when a shock occurs. They study investor stock allocation, following an unforeseen shock – the victory of Donald Trump in the 2016 US presidential election. It seems that investors have different outlooks depending on their interpretation of the same information and that this variation in behavior can show up in geographic clusters.

Macro and financial economists also have better tools to capture macro-financial linkages. Fabrice Tourre presented new software he developed with Lars Peter Hansen and Paymon Khorrami. It is a DSGE model that includes financial frictions. The software is freely available online for download. It will empower researchers and policy makers to better understand how financial frictions impact macro and financial outcomes.

Panel discussion

The 2019 MFM Capstone conference also included a panel discussion with policy experts, including Nellie Liang, Brookings Institution; Tobias Adrian, IMF; Richard Berner, NYU Stern School of Business; and Wilson Ervin, Credit Suisse Group. While much has been learned since the financial crisis in 2008-2009, the group shared their perspectives on the current modeling challenges and existing knowledge gaps. The panel discussion, moderated by MFM project co-director, Andrew W. Lo, focused on a number of different topics and questions, including:

- How effective are alternative macroprudential tools?
- How should macroprudential policy respond to macroeconomic and financial market indicators?
- What are some of the successes and failures of the Office of Financial Research (OFR)’s methods of data collection?
- What hope remains for monitoring and managing financial stability in the future?

Conclusion

Since MFM’s inception seven years ago, the field of economics has made much progress in building models that better capture macro-financial linkages and frictions that traditional models tend to overlook. The models presented at the group’s 2019 meeting are a testament to how far economists have come since the crisis. These efforts have deepened our understanding of how monetary policy tools are transmitted across a diverse economy with heterogeneous agents. These insights can help policymakers better understand vulnerabilities of the financial sector as they explore how best to design and implement policies in the future.
Throughout its seven-year history, the MFM project produced:

- **Hundreds of papers** and an online compendium of research related to better measurement of systemic risk
- Innovative and improved **software tools** for macroeconomic modeling,
- New knowledge in the form of dissertations and journal articles that explore linkages between economic sectors
- A network of prominent scholars and innovative early-career researchers actively working in this field.

But there is still work to be done—a point underscored by Robert Merton in his keynote speech. A longtime advocate of enhanced macro-financial integration, Merton urged young scholars to use the tools from finance to measure and gauge risk, pioneer new ways to diversify risk, even the presence of new frictions like capital. He also offered new insights on an often-neglected area of finance, personal finance, or how people save and invest for retirement.

Many areas of research remain unexplored, and more will emerge as the economy continues to evolve. An understanding of how to approach risk and uncertainty will be more critical than ever.

Going forward, the MFM project will retain certain components of its activities, while eliminating others due to a lack of funding. The group will work to invest in a cross-linked MFM online presence across multiple entities with overlapping research aims to construct a better platform for demonstrating the tools and information generated by the MFM Executive Group projects. In addition, the project will potentially continue to hold semi-regular summer sessions targeted toward young scholars, as this has proven to be a fruitful endeavor.

The group will continue to maintain its research advances, **tools and software** on its website and will further engage elite scholars in its community in future converging efforts such as research conferences and other engagements. In addition, research entities with overlapping interests in macro economics and finance at the University of Chicago, MIT, Princeton, NYU Stanford and elsewhere will continue collaborative efforts and will engage other entities such as the Macro Finance Society to continue to nurture innovative research.

By raising the level of dialogue on important policy challenges triggered by macro finance linkage, funding a total of 81 dissertation fellowship awardees, and gathering hundreds of contributors at its regular events and conferences over its seven-year-history, the MFM project has played a vital role in nourishing a vital community of scholars dedicated to producing frontier research in this arena.