Financial Innovation and the Macro Economy

The decade leading up to the financial crisis was marked by a raft of financial innovation, with new markets and financial instruments promising greater efficiency and stability—and, in turn, prosperity to the macro economy. The crisis and the sluggish recovery, however, have raised questions about the assumptions underlying innovation: Can financial innovation make markets more efficient, or does it increase financial instability? What are the macroeconomic and policy implications of new markets and instruments? “Financial Innovation and the Macro Economy,” the fifth annual conference of the Julis-Rabinowitz Center for Public Policy and Finance, sought to examine those questions and others. To understand the relationship between markets, financial innovation, macroeconomics and policy, researchers took a closer look at mortgage design, sovereign debt design, and bank debt design, among other topics, bringing both a theoretical perspective as well as a practical approach to the issues.

Delivering the keynote was Lord Adair Turner, who spoke on “Monetary Policy and Financial Stability in the Modern Economy.” Lord Turner, who served as the head of the Financial Services Authority during the financial crisis, sounded two themes that would recur throughout the day: first, that the role played by banks in modern economies bears little resemblance to its textbook image; and second, that the debt overhang continues to impact the post-crisis recovery. While the explosion in debt should have sounded more alarms leading up to 2008, those warnings were muted, claimed Lord Turner, in part because of the prevailing pre-crisis orthodoxy, which held that banks and other intermediaries play no important role in the economy and that balance sheets are unimportant. Another textbook orthodoxy was that banks lend money to entrepreneurs. In fact, Lord Turner pointed out, banks do much more. In a modern economy, bank lending does not fund entrepreneurs or businesses, thereby allocating funds among alternative investment projects. Bank lending
grants credit and purchasing power to fund consumption—but that consumption consists in buying existing assets and real estate. The fierce effort of households and businesses to slash debt and repair balance sheets in the aftermath of the crisis has simply shifted the debt onto other areas of the economy. If the debt overhang is not addressed, noted Turner, the U.S. and other developed economies may find themselves in the same position as Japan, where a 1990s real estate bubble and collapse continues to weigh down the economy.

Jeremy Bulow, Stanford Graduate School of Business

The problem of debt overhang, as it relates to banks, was addressed in “Equity Recourse Notes: Creating Countercyclical Bank Capital,” by Jeremy Bulow and co-author. The authors propose a new form of hybrid bank capital—equity recourse notes, or ERNs—designed to ameliorate booms and busts by creating counter-cyclical incentives for banks to raise capital and thus encourage bank lending in bad times, solve the too-big-to-fail problem and reduce regulators’ reliance on accounting measures to assess adequate capitalization. ERNs, Mr. Bulow explained, are a form of contingent capital that start out as debt but where any due payment is automatically converted into equity if the share price is below a trigger (a fixed fraction of the issue-date share price) on the day the payment is due. With traditional financing, a “debt overhang” problem arises when a bank that has suffered losses wants to raise new capital to repair its balance sheet: the new risk capital (equity or junior debt) takes on some of the risk previously borne by existing creditors; since the new investors must be offered a market rate of return, the increase in existing creditors’ wealth must come at equity holders’ expense. So a bank with a traditional capital structure has strong incentives to avoid raising new funds and to instead stop making new loans in stressed times. In contrast, ERNs can create a “reverse debt overhang”: a fall in a bank’s share prices makes it easier for the bank to raise new capital because it makes new ERNs senior to existing ERNs (old debt) and increases the value of equity. Although ERNs superficially resemble traditional ‘contingent convertibles’ (cocos), they resolve the significant problems with cocos—in particular, they convert more credibly. ERNs are a way to move toward a more market-based way of dealing with bank capital. According the Bulow, in the longer run, substituting ERNs for most, or even all, ordinary bank debt could substantially stabilize the banking system. The appeal of ERNs is that it is a passive, automatic self-repairing mechanism through which banks can raise equity and repair their balance sheets.

Martin Schneider, Stanford University

In “Payment and Asset Prices,” Martin Schneider and Monika Piazessi analyze how payments, credit and asset prices are determined—in a world where large banks provide payment services in highly securitized credit markets. The paper’s starting point is that in modern economies, transactions occur in two layers: an end-user layer in which non-banks—households, firms and institutional inves-
tors—trade goods and securities, using “inside money” (payment instruments supplied by banks, such as checking, debit accounts, credit lines and money-market funds). The second layer is the bank level, which handles end-user instructions by making intra-bank payments with reserves, that is, with “outside money.” The government (the central bank and fiscal authority) issues debt, reserves and trades in securities and sets the interest rates on reserves. Both banks and the government incur costs of leverage that decline with the quantity and quality of available collateral, in particular securities and claims to future taxes. The government can select one of two policy regimes: a scarce reserves regime where banks do not always have sufficient reserves to handle all interbank payments but instead turn to the short term credit market for liquidity (pre-2008), and an abundant reserves regime where banks never need overnight borrowing. Because payments occur in two layers, the textbook view of a “liquidity trap” holds only for banks but not for end-users (non-banks). Even if reserves are abundant, payment instruments are not—as issuing them is always costly for the banks. Furthermore, unconventional policies that change the mix of assets in the economy still matter.

In the real world, contrary to the tenets of the intermediation of loanable funds theory, banks do not lend funds obtained from savers, they provide financing through money creation: they create their own funding in the act of lending. In “Banks Are Not Intermediaries of Loanable Funds, and Why This Matters,” Michael Kumhof and his co-author ostensibly seek to examine the endogenous production of money—but their real subject is the gulf between economic theory and actuality. In the wake of the Great Financial Crisis, it is generally accepted that banking models ought to play a key role in supporting monetary and macro prudential policy analysis. The problem, however, lies in the use of the intermediation of loanable funds theory. In the real world, banks do not accept deposits of pre-existing real funds from savers and then lend them to borrowers. Kumhof argues that in the real world, banks provide financing through money creation: funds exist in the mind of the banker, and then materialize digitally along with the loan once the banker has decided to make the loan. The bank creates its own funding, deposits, in the act of lending, in a transaction that involves no intermediation whatsoever. This has important repercussions since the main constraint on lending then is the boom-bust mentality on the part of bankers.

In “Anti-Competitive Effects of Common Ownership,” Martin Schmalz and co-authors took up the question of whether public companies owned by the same investor or group of investors have reduced incentives to compete. While such schemes were commonplace in the era of J.P. Morgan’s voting trusts, could they happen today, given the seemingly passive and anonymous role played by institutional investors like BlackRock? The paper offered evi-
Postsecondary education, like housing, has seen an expansion in loan balances and distress over the past decade.

David Lucca and co-authors tackle the long-standing debate on the role of credit on the rising cost of a higher education in “Credit Supply and College Tuition.” Lucca noted that from a funding perspective, housing and postsecondary education share many features in the past decade: both debt categories saw an expansion in loan balances and distress. With sticker prices on higher education growing 46% in real terms from 2001 to 2012, what is causing the rise in college cost? And have the increases in financial aid in recent years enabled colleges to raise the tuitions? Does more borrowing lead to higher tuitions? Lucca finds that, indeed, higher financial aid leads to a rise in tuition costs that in the short run is costly to students but it may be offset in the long run by higher capacity and improved education quality.

Policy Panel Discussions

In his introduction to the policy panel on “Financial Innovation in Practice: Sovereign, Mortgage and Student Debt Markets,” Atif Mian addressed the question of the design of the financial contracts and noted that there are two separate schools of economic thought: the first, which finds debt to be the optimal contract because it is less sensitive to informational asymmetries and rests residual risk on the borrower; and the second school, which argues that in the principal-agent model, risk ought to be absorbed by the party that is the most risk neutral (banks). He added that recent literature emphasizes that there is a macro externality to this risk sharing question, if too much of the losses are borne by the banks the whole economy might tank or if they are borne by the households aggregate demand will fall and again the economy will falter. So, the key challenge is “How to balance the tension about the optimality of debt at the micro-level with the fact that we want more risk sharing in the economy from a macro-prudential perspective.”

Susan Wachter, Miguel Palacios, Christopher Neilson, and Ashoka Mody tackled this question as it relates to three markets: student loan, mortgage and sovereign debt.
Panelists

Miguel Palacios, addressing the issue of burgeoning student loan debt, offered income-based funding as a financial innovation. That funding could take one of two forms: income-contingent loans where graduates pay a percentage of their income until the balance reaches zero and income share agreements where there is no contract length or balance but graduates continue to pay a percentage of their income. Microeconomist Christopher Neilson noted that one approach to student loans may be to confront it from a supply-side perspective: determine how much a career in a certain field will yield and loan only that percentage of the cost that will be covered by the potential earnings. Neilson pointed out that Lumi, a lender based in South America, takes just such an approach towards its loans.

Turning to mortgage debt, Susan Wachter discussed the need to improve the pricing of risk and of the idea of a true non-recourse mortgage loan, an instrument developed by herself and a colleague. A true non-recourse loan (and other instruments like the shared-risk mortgage or Robert Shiller’s continuous workout mortgage, where the principal and payments would adjust to a local home price index) would place the onus on lenders, not borrowers, and thus would solve the dilemma of debt overhang.

Ashoka Mody argued in his presentation that sovereign debt is a misnomer and that while we may call it “debt,” sovereign debt should be treated more like equity. Sovereign debt acquired its debt-like structure in the aftermath of what Mody called the “Geithner Approach,” the stance taken by former Treasury Secretary Timothy Geithner who said there should be no default on sovereign debt in the midst of a crisis. That approach does not work, but in the wake of the great financial crisis, we remain at a crossroads. Mody called for a contractual agreement wherein sovereign debt has an equity-like feature built into it, rather than being at the whim of a regulator or a protracted negotiation process is preferable.
In Conclusion

“Financial Innovation and the Macro Economy” highlighted the lingering legacy of the financial crisis: first, it focused on debt overhang, which continues to haunt the global economy; second, it exposed the inadequacy of the capital structure of banks in a sharp downturn and the need for an innovative automatic mechanism to be in place so banks will be able to raise capital and repair their balance sheets when the next crisis hits; third, it demonstrated that the details of how monetary policy is implemented matter greatly and that banks are more than simply intermediaries of loanable funds and instead finance economic activity through money creation; and finally, it begged the question: how do we as a society balance the optimality of the debt as an instrument versus the need for greater risk sharing? At the same time, the conference also offered a glimpse of some of the financial innovations that the future may hold.

“What I, as an undergraduate, gain from attending the research conference sponsored by the Julis-Rabinowitz Center is an unparalleled opportunity to see top economists presenting their new projects and engaging in deep discussion with their colleagues. Listening to David Lucca talk about measuring the effect of federal subsidies for student loans on college tuition, or to Martin Schmalz on the anti-competitive effects of common ownership among airlines, is an inspiration to a young, budding economist. They provide stellar examples, not only abstractly of how research in economics should be done, but also real, live, breathing examples of how such great research is actually achieved.”

Evan Soltas
Princeton Class of 2016, Rhodes Scholar

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