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Financial Stability: Frontier Risks, a New Normal, and Policy Challenges

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The tenth annual financial stability conference, organized by the Federal Reserve Bank of Cleveland and the Office of Financial Research, explored challenges stemming from both short- and long-term risks to financial stability. The conference, which focused on frontier risks, a new normal, and policy challenges, featured both academic papers and panels on macroprudential and monetary policy, financial institutions, and financial markets; paper presentations; and remarks from three speakers. This *Economic Commentary* summarizes the academic papers and keynotes from the conference.

The recent failures of Silvergate Bank, Silicon Valley Bank, and Signature Bank exposed both the rapidly evolving threats to financial stability stemming from changing fiscal, monetary, and regulatory policies and the challenges stemming from an increasingly interconnected set of markets and institutions. At the same time, other risks, perhaps operating on a longer timeframe, have not gone away. Cybersecurity disruptions have introduced a growing set of vulnerabilities to the increasingly automated and interconnected financial system. Further, the financial stability consequences of climate risks and associated policy responses are still not well understood, though they have drawn increasing attention. The tenth annual financial stability conference held on November 17–18, 2022—titled Financial Stability: Frontier Risks, a New Normal, and Policy Challenges and organized by the Federal Reserve Bank of Cleveland and the Office of Financial Research—explored challenges stemming from both short- and long-term risks to financial stability. Although the 2022 conference took place months before the recent bank failures mentioned above, it addressed issues that have since become quite topical.

The conference featured both academic papers and panels on macroprudential and monetary policy, financial institutions, and financial markets, with academic sessions that each comprised two paper presentations and a discussion along with a "lightning round" of three brief paper presentations. Loretta J. Mester, president of the Federal Reserve Bank of Cleveland, and James Martin, deputy director of operations performing the duties of the director at the US Treasury Office of Financial Research, presented opening remarks.[1,2] The regulatory keynote was provided by Tobias Adrian, director of the Monetary and Capital Markets Department at the International Monetary Fund.[3] This *Economic Commentary* summarizes the academic papers and keynote talks delivered at the conference.

Papers, presentations, and videos of the conference can be found at
clevelandfed.org/events/financial-stability-conference/2022/ev-20221117-financial-stability-conference-2022

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Macroprudential and Monetary Policy

The person on the street usually thinks of central banks such as the Federal Reserve in terms of setting monetary policy to affect inflation and unemployment, but often they also regulate and supervise banks.[4] The two roles are linked, however, as interest rates can affect bank risk, and banking regulations can affect how banks pass through interest rates to businesses and households. The two papers in this session addressed the question of whether monetary policy should be used for macroprudential purposes and how the macroprudential environment frames the monetary policy debate.

In "Bank Runs, Fragility, and Credit Easing," Manuel Amador and Javier Bianchi present a theoretical model of self-fulfilling bank runs that also depend on conditions in the overall economy. A bank run occurs when investors lose confidence, triggering large deposit withdrawals and leading the bank to default on its obligations. They characterize how macroeconomic aggregates such as GDP or asset prices affect the vulnerability of individual banks and also how the number of banks facing a run affects those macroeconomic aggregates in turn. Bank runs may lead to all banks' defaulting or only a few, depending on the leverage in the banking system and the reaction of asset prices. Credit easing, during which the central bank buys assets, turns out to be good or bad depending on whether a financial crisis is driven by fundamentals or by self-fulfilling runs. In a run triggered by fundamentals, credit easing leads to more banks' defaulting, while a self-fulfilling run can be stabilized by credit easing.

In a financial crisis, the behavior of market participants and policymakers often depends on their experience and the collective memories and shared narratives relating to past crises. Dasol Kim, William Goetzmann, and Robert Shiller investigate this in their paper "Crash Narratives." For collective memories about major stock market crashes, investors may rely on associated narratives, or "crash narratives," to inform current beliefs and choices, and these narratives are often transmitted by the financial press. Recent advances in computational linguistics allow the authors to carefully analyze the language in newspaper articles that appear following major crashes. The authors provide evidence that crash narratives propagate broadly once they appear in news articles and that significantly explain predictive variation in market volatility. Survey data can help to distinguish between the effects of narrativity and fundamental conditions. Significantly, they also find that in times of high market stress and uncertainty, when investor attention is higher (measured by internet search volume), the financial press is more likely to tell stories, that is, to employ narratives, as opposed to just reporting prices, volumes, and other facts.[5]

Financial Institutions

Bank failures and banking panics are perennial financial stability issues. These may be caused by traditional problems such as banks' taking excessive interest rate risk (Silicon Valley Bank is a recent example). However, the modern world has created a new set of risks, or, at a minimum, new variants of old risks. The papers in this session address the issue of cyberattacks and the disappearance of the London interbank offered rate (LIBOR), an interest rate used to set rates on trillions of dollars of loans and derivatives.

In "Cyberattacks and Financial Stability: Evidence from a Natural Experiment," Antonis Kotidis and Stacey Schreft study the effects of a multiday cyberattack on a technology service provider (TSP). This attack impaired the ability of banks that used the TSP to send payments over Fedwire even though the Federal Reserve extended the time they had to submit payments and even though the banks were not directly attacked. This impairment (first-round effect) reduced payments to other banks (second-round effect), leaving them at risk of having too few reserves to send their own payments (a potential third-round effect). These innocent-bystander banks responded differently depending on their size and reserve holdings. Those with sufficient reserves drew down their reserves. For those without sufficient reserves, smaller banks borrowed from the discount window, while larger banks borrowed in the federal funds market. These significant adjustments to operations and funding prevented the second-round effect from spilling over into a third-round effect and broader financial instability. This highlights the importance of bank contingency planning, liquidity buffers, and the Federal Reserve in supporting the financial system's recovery from a cyberattack.

In "Bank Funding Risk, Reference Rates, and Credit Supply" Harry Cooperman and his coauthors Darrell Duffie, Stephan Luck, Zachry Wang, and David Yang examine a conundrum facing banks in difficult times: Corporate borrowers want to draw down their credit lines and obtain funding, but the bank's cost of funding is high, making it difficult or expensive to provide the credit. Precommitted revolving credit lines tend to be drawn down heavily when bank funding markets are stressed, presenting an important risk to banks. Until recently, banks have mitigated this funding risk by linking the interest paid on lines to risk-sensitive reference rates such as the London interbank offered rate (LIBOR). Such links, however, dampen the banks' incentives to provide credit lines because of the debt-overhang cost to bank shareholders associated with funding stressed-market drawdowns. The good news is that the associated adverse effect on credit supply is attenuated if (1) drawdowns are expected to be deposited at the same bank, a situation which occurred at the largest banks during the COVID-19 shock of March 2020, and (2) revolving credit is linked to credit-sensitive reference rates that reduce borrower incentives to draw more heavily on their lines during stressed markets. The paper then estimates that replacing LIBOR with risk-free alternative reference rates such as the secured overnight financing rate (SOFR) will affect the supply of revolving credit. The new risk-free rates may transfer risk to bank shareholders, leading to less credit.[6]

Financial Markets

Wholesale money markets are often at the center of questions of financial stability, providing an important but runnable source of funding for banks and commercial firms. Connecting banks, mutual funds and firms, they are central to the implementation and transmission of monetary policy.

The academic papers in this session take a closer look at the dynamics and competition in this market.

In "How Abundant Are Reserves? Evidence from the Wholesale Payment System," Gara Afonso and coauthors Darrell Duffie, Lorenzo Rigon, and Hyun Song Shin note that before the era of large central bank balance sheets (roughly before 2008), banks relied on incoming payments to fund outgoing payments to conserve scarce liquidity. The paper goes on to show that even in the era of large central bank balance sheets, outgoing payments remain highly sensitive to incoming payments, even though banks might have funded outgoing payments with abundant reserve balances. These results shed light on the adequacy of reserve balances by providing a window on liquidity constraints revealed by payment behavior. Given the ongoing shrinking of central bank balance sheets in response to inflation, establishing the thresholds for reserves to be abundant is quite timely.

Amy Wang Huber, in "Market Power in Wholesale Funding: A Structural Perspective from the Triparty Repo Market," models and estimates the equilibrium rates and volume in the triparty repurchase agreement (repo) market, searching for evidence of imperfect competition in this systemically important wholesale funding market. Despite trading seemingly identical repos in the triparty market, dealers pay persistently different rates. In the triparty market, Huber models the market equilibrium as cash lenders allocating their portfolios among various differentiated dealers who offer repo rates and finds that cash lenders' aversion to portfolio concentration and preference for stable lending give dealers substantial market power. Between 2011 and 2017, dealers borrowed at rates that were 21 basis points (bps) lower than their marginal value of intermediating borrowed funds. Dealers' market power makes the observed wholesale repo rate understate the financing rate available to market participants who rely on repo funding and offers a novel explanation for funding spreads such as the Treasury cash-futures basis and the Treasury swap spread.[7]

Keynote Address

During the keynote address, Tobias Adrian of the International Monetary Fund (IMF) spoke about highlights from the IMF's fall 2022 *Global Financial Stability Report*. He noted that since the previous IMF report was released, four challenges have stood out. Many countries expect to tighten monetary policy, as persistent inflation has prompted central banks to act more aggressively. Globally, stagflation threatens, as investors expect inflation to remain elevated even as earnings downgrades and higher rates reduced equity prices. Further exacerbating stagflation chances is that the energy crisis intensified in Europe, with rising energy prices possibly pushing countries into a recession. Among emerging markets and developing economies (EMDEs), vulnerable economies face defaults and difficult restructurings even as policy confronts global uncertainty. Finally, global housing risks have been intensifying as stretched valuations meant consumers increasingly relied on low interest rates to maintain affordability. In China, in particular, a stalled housing market has distressed developers, potentially threatening home completions while extensive defaults could lead to large losses at banks.

Having emphasized the problems, Adrian then presented the *Global Financial Stability Report*'s recommendations for preserving financial stability. In the area of monetary and macroprudential policy, central banks should act to restore price stability and avoid any de-anchoring of inflation expectations that would damage their credibility. Communication, he noted, is crucial to avoid unwarranted market volatility, and so policymakers should clearly communicate their policy function, their commitment to their objectives, and the desire to further normalize policy.

To contain any further buildup of financial vulnerabilities, policymakers should adjust macroprudential tools to the specific challenges and circumstances of the country. While normalizing monetary policy in the face of heightened uncertainty, policymakers must avoid procyclicalities and contain the growth of vulnerabilities without creating disorderly financial conditions. Beyond monetary policy, he emphasized the increasing importance of nonbank financial institutions (NBFIs) and called for counterparties to carefully monitor intraday activity and leverage exposures, strengthen liquidity risk management practices, and enhance transparency and data availability. Adrian argued that policymakers should provide guidance on liquidity management tools such as swing pricing, tighter monitoring of funds' risk management practices, and perhaps requiring additional disclosures.

Conclusion

The conference papers explored a wide range of risks facing the financial system, as befits a conference seeking to find policy responses to the frontier risks of the financial system. Whether the challenge was as obvious as a bank run or a cyberattack, as subtle as a shift in underlying reference rates or a change in narrative, or as hidden in the details as bank reserves and money markets, policymakers must confront a new normal of diverse risks.

Endnotes

1. Special thanks go to the discussants of the academic paper sessions: Greg Phelan of the Office of Financial Research for the macroprudential and monetary policy session, Peter Zimmerman of the Cleveland Fed for the financial institutions session, and Yi Li of the Board of Governors of the Federal Reserve System for the financial markets session.

2. The panel on macroprudential and monetary policy was moderated by Narayana Kocherlakota, University of Rochester, with panelists Sujit Kapadia, European Central Bank; Bill Nelson, Bank Policy Institute; and Steve Williamson, Western University.

   The panel on financial institutions was moderated by Beverly Hirtle, Federal Reserve Bank of New York, with panelists Andrew Felton, Federal Deposit Insurance Corporation; Marc Saidenberg, Ernst & Young; and Anjan Thakor, Olin Business School at Washington University in St. Louis.

   The panel on financial markets was moderated by Mark Carey, Federal Reserve Bank of Cleveland, with panelists Richard Berner, New York University Leonard N. Stern School of Business; Klaus Loeber, European Securities and Markets Authority; and James Sweeney, Blackrock.

3. Particular thanks go to the Scientific Committee, which helped choose and organize the papers: Jennie Bai, Georgetown University; Christa Bouwman, Texas A&M University; Wenxin Du, University of Chicago Booth School of Business; Kinda Hachem, University of Virginia Darden School of Business; Kathleen Hanley, Lehigh University; Luc Laeven, Tilburg University; Elena Loutskina, University of Virginia Darden School of Business; Andreea Minca, Cornell University; and Alan Taylor, University of California, Davis.

4. For example, central banks involved in the supervision and regulation of banks include the European Central Bank (ECB), the Bank of England, the Reserve Bank of India, and the Deutsche Bundesbank, though Germany also has a separate Federal Financial Supervisory Authority (BaFin). In Canada, bank supervision is the responsibility of the Office of the Superintendent of Financial Institutions, and in France it is the Autorité de contrôle prudentiel et de résolution (ACPR).

5. The papers in the lightning round for this session were "Unintended Consequences of Holding Dollar Assets" presented by Robert Czech, Bank of England; "Open Banking: Credit Market Competition When Borrowers Own the Data" presented by Jing Huang, Texas A&M University; and "The Financial Origins of Non-Fundamental Risk" presented by Sanjay R. Singh, Federal Reserve Bank of San Francisco.

6. The papers in this lightning round were "Shock Absorbers and Transmitters: The Dual Facets of Bank Specialization" presented by Sotirios Kokas, University of Essex; "Neglected No More: Housing Markets, Mortgage Lending, and Sea Level Rise" presented by Philip Mulder, US Treasury Office of Financial Research; and "Dissecting Climate Risks: Are They Reflected in Stock Prices?" presented by George Skiadopoulos, Queen Mary University of London and University of Piraeus.

7. The papers in this lightning round were "Bank Debt versus Mutual Fund Equity in Liquidity Provision" presented by Kairong Xiao, Columbia University; "Shocks and Technology Adoption: Evidence from Electronic Payment Systems," presented by Apoorv Gupta, Dartmouth College; and "Intermediary Balance Sheets and the Treasury Yield Curve" presented by Wenxin Du, University of Chicago Booth School of Business.

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