

# ECONOMIC COMMENTARY

## Planning for Surprises, Learning from Crises: The 2021 Financial Stability Conference

*Joseph G. Haubrich*

This *Commentary* summarizes the academic papers and keynote talks delivered at the 2021 Financial Stability Conference hosted by the Office of Financial Research and the Federal Reserve Bank of Cleveland, held virtually on November 17–19, 2021.

For videos of the panel and paper discussions and links to the conference presentations, go to the conference webpage: [clevelandfed.org/newsroom-and-events/events/2021/2021-financial-stability-conference](https://clevelandfed.org/newsroom-and-events/events/2021/2021-financial-stability-conference)

The disruptions associated with the coronavirus pandemic of 2020, coming just more than a decade after the Great Financial Crisis of 2007–2009, alerted the public and policymakers alike to the dangers of shocks from within and without the financial system. These disruptions provided a live-fire stress test for reforms adopted following the Great Financial Crisis, ushering in a new set of responses whose long-term impacts remain to be determined. They also drew attention to vulnerabilities in the financial system, some foreseen and others that emerged unexpectedly.

The 2021 Financial Stability Conference hosted by the Office of Financial Research and the Federal Reserve Bank of Cleveland, held virtually on November 17–19, 2021, was an opportunity not only to reflect on the efficacy of the response to the SARS-CoV-2 (COVID-19) pandemic and past actions, but also to seek reforms to confront the challenges of a new normal for which heretofore supposed once-in-a-lifetime disruptions may come every decade. The conference featured both academic paper sessions and panels on (a) the relationship between fiscal and monetary responses and financial stability, (b) the role of shocks and vulnerabilities in financial stability, and (c) externalities

associated with financial instabilities.<sup>1,2</sup> The stage was set with opening remarks from Loretta J. Mester, president and chief executive officer of the Federal Reserve Bank of Cleveland, and by Dino Falaschetti, then-director of the Office of Financial Research. The conference featured keynotes by Governor Christopher J. Waller of the Board of Governors of the Federal Reserve System and by Professor Viral Acharya, C. V. Starr Professor of Economics at New York University Stern School of Business.

This *Commentary* summarizes the academic papers and keynote talks delivered at the conference.

### **Fiscal and Monetary Responses and Financial Stability**

Both fiscal and monetary policy reacted aggressively to the COVID-19 pandemic with traditional infusions of liquidity and unprecedented credit programs. The papers in this session explore the causes of instability in money and credit markets and what is needed for policy to be effective.

Wenhao Li, in “Dissecting Mechanisms of Financial Crises: Intermediation and Sentiment,” work with Arvand

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*Economic Commentary* is published by the Research Department of the Federal Reserve Bank of Cleveland. *Economic Commentary* is also available on the Cleveland Fed's website at [www.clevelandfed.org/research](https://www.clevelandfed.org/research). To receive an e-mail when a new *Economic Commentary* is posted, subscribe at [www.clevelandfed.org/subscribe-EC](https://www.clevelandfed.org/subscribe-EC).

Krishnamurthy, develops a theory of financial crises in which the transmission of the crisis depends both on intermediaries such as banks and on market sentiment, as in time-varying beliefs about market liquidity. Banks contribute to the crisis because losses erode bank capital, a situation which in turn induces the banks to reduce lending. This occurrence can explain crisis severity and the slow economic recovery after the crisis, but it misses the frothy run-up of asset prices prior to the crash, an event which also serves as an indicator of crisis danger. As memories of a financial panic fade, banks and investors consider a panic increasingly unlikely, and stock prices and bank lending increase. When the panic does return and risky loans take losses, the losses and the sobering news crash asset prices and lead banks to cut back lending and reduce economic activity. Despite the important role of sentiment, policymakers would not need to “get into the minds” of investors, but they can instead watch market indicators such as credit spreads.

Distinct from sentiment, Nathan Foley-Fisher and coauthors Gary Gorton and Stéphane Verani argue in “Adverse Selection Dynamics in Privately-Produced Safe Debt Markets” that changes in information also play a key role. Some assets are designed to be so low risk (that is, “safe”) that it is not worth investigating their backing; the risk of getting a “lemon” is just too small to bother about. With a big enough shock, such as a COVID-19 pandemic, though, that information becomes valuable again, and an asset that was information *insensitive* may become information sensitive. This situation means that adverse selection—the chance of getting a lemon—can become important in the market and that trading can become more expensive. The paper studies these dynamics in a very important asset class, collateralized loan obligations (CLOs), which are securitization vehicles that finance loans to below-investment-grade firms. It decomposes the bid-ask spreads on the AAA-rated tranches of CLOs into a component reflecting dealer bank balance sheet costs and the adverse selection component. It finds that about half of the decrease in liquidity during the pandemic was due to the “lemons premium.”

Karsten Müller and coauthor Emil Verner take a closer look at the impact of lending in “Credit Allocation and Macroeconomic Fluctuations.” Like Li and Krishnamurthy, they note that downturns are often preceded by rapid credit growth, but they go on to ask why some credit expansions end badly and others lead to growth spurts. Looking at the dispersion of credit across different sectors of the economy in 117 countries starting in 1940, they find that the sectoral allocation of credit matters for distinguishing between “good” and “bad” credit booms. Credit to nontradable sectors, including construction and real estate, is associated with a boom–bust pattern in output, similar to household credit booms. Such lending booms also predict elevated risk of financial crises and productivity slowdowns. In contrast, tradable-sector credit expansions are followed by stable output and productivity growth without a higher risk of a financial crisis. These findings highlight that what credit is used for is important for understanding how it affects the broader economy.

## Financial Stability: Shocks and Vulnerabilities

This session took a more detailed look at markets that can be both the source of shocks to the financial system and are also vulnerable to troubles in other parts of the system. The papers emphasized important new risks that have only become apparent recently.

In “Liquidity Provision and Coinsurance in Bank Syndicates,” Vladimir Yankov and coauthors Kevin Kiernan and Filip Zikes look beyond the liquidity position of individual banks and try to assess the liquidity capacity of the banking system as a whole. Banks can coinsure the liquidity risk of credit-line drawdowns, an action which generates a network of inter-bank exposures. Simulations based on a simple model of this network suggest that the liquidity capacity of large banks has significantly increased following the introduction of liquidity regulation and that the liquidity coinsurance function in loan syndicates is economically important. Corporate borrowers that more heavily rely on credit lines from banks for liquidity management have become more likely to obtain credit lines from syndicates with higher liquidity. This assortative matching on liquidity characteristics has strengthened the role of banks as liquidity providers to the corporate sector.

The trade-off between efficiency and crisis resilience in the repurchase agreements market is the concern of Tobias Dieler and coauthors Lorian Mancini and Norman Schürhoff in the paper “(In)efficient Repo Markets.” Repurchase agreements, or “repo,” are an important source of funding in the financial markets but also have been subject to recurrent runs. Existing repo markets combine different trading and clearing mechanisms. The different markets have different trade-offs between allocating liquidity efficiently and resilience to funding shocks. Trading and clearing mechanisms matter crucially for this trade-off. Furthermore, the relative benefits of particular market designs depend on the size of the funding shock hitting the market. Two common mechanisms, anonymous central-counterparty (CCP) and nonanonymous over-the-counter (OTC) markets, are inefficient; which one is better depends on funding tightness. For small funding shocks, adding a collateral protection channel leads to less efficient allocations in OTC markets but improves funding allocation in CCP markets. For large funding shocks, CCP markets are more resilient to runs than OTC markets, but, absent a well-capitalized default fund, CCP runs create systemic risk. Two innovations to repo market design improve welfare: a liquidity-contingent trading mechanism and a two-tiered guarantee fund in which collateral transfers insure against illiquidity while the default fund insures against insolvency.

The role of hedge funds in the Treasury market turmoil of March 2020 is the focus of R. Jay Kahn and coauthor Daniel Barth in “Hedge Funds and the Treasury Cash-Futures Disconnect.” It is well documented that hedge funds sold Treasury securities in March 2020, but this leaves open questions of why they held so many and what

induced them to sell when they did. The paper documents the rise and fall of an arbitrage trade among hedge funds, known as the Treasury cash-futures basis trade, which exploited a fundamental disconnect between cash and futures prices of Treasuries. The paper finds that in recent years a replicating portfolio of Treasury bills and futures has been overvalued relative to Treasury notes and bonds, creating an opportunity for arbitrageurs. Using regulatory datasets on hedge fund exposures and repo transactions, the paper shows that this basis trade became popular among hedge funds following 2016, comprising as much as half of all hedge fund Treasury positions. In March 2020, many of the risks of the trade materialized as Treasury market illiquidity associated with the COVID-19 pandemic led to large sales of these basis trade positions among hedge funds. While Treasury market disruptions spurred hedge funds to sell Treasuries, the unwinding of the basis trade was likely a consequence rather than the primary cause of the stress. Prompt intervention by the Federal Reserve may have prevented the unwinding activities from accelerating the deterioration of Treasury market functioning. The results underscore the importance of nonbanks in the current structure of the Treasury market and suggest this structure could create risks going forward.

### **Financial Instability Externalities**

Externalities—the neighborhood effects that one firm or industry has on others—are an important factor in the causes and consequences of financial instability. This paper session looked at three important externalities relating to cybersecurity, climate change, and network effects.

Francesco Vallasca and coauthors Fabian Gogolin and Ivan Lim look at the response of customers to data breaches at small US banks (less than \$10 billion in assets) in “Cyberattacks on Small Banks and the Impact on Local Banking Markets.” The paper documents that successful cyberattacks slow deposit growth at branches of small US banks. A loss of trust means deposits move to large banks in the same local market, a “flight to reputation.” Additionally, cyberattacks generate reputational damages in mortgage markets wherein hacked banks attract riskier applicants and are forced to lower their credit standards. Ultimately, the results imply that cybersecurity investments are crucial for banks to attract and retain customers and can affect the structure of local banking markets.

For the financial sector, an important risk of climate change is the element of transition risk, the financial risk resulting from the transition to a lower carbon economy. In “Banking on Carbon: Corporate Lending and Cap-and-Trade Policy,” Sumudu Watugala and coauthors Ivan Ivanov and Mathias Kruttl look at the impact of carbon pricing policy on bank credit to firms with greenhouse gas emissions. Exploiting the geographic restrictions in the California cap-and-trade bill and a discontinuity in the free-permit threshold of the federal Waxman-Markey cap-and-trade bill, they find that

affected high-emission firms face shorter loan maturities, lower access to permanent forms of bank financing, and higher interest rates. They also have a higher participation of shadow banks in their lending syndicates. These effects are concentrated among private firms, a situation suggesting banks are less concerned about the policies’ impact on publicly traded firms. Overall, banks quickly mitigate their exposure to climate transition risks.

Banks may be connected directly—through loans and deposits—but indirect connections—through exposure to the same non-bank counterparties—might be just as important, as evidenced during the Great Financial Crisis. Dasol Kim and coauthor Andrew Ellul investigate this by studying bank counterparty relationships in over-the-counter (OTC) derivative markets. In their paper “Counterparty Choice, Bank Interconnectedness, and Systemic Risk,” they look at how banks choose counterparties using regulatory data. They find evidence consistent with moral hazard behavior in bank counterparty choice and, perhaps more worrisome, that those choices may be a source of systemic risk. Banks are more likely to either create or maintain linkages with nonbank counterparties, particularly riskier ones, that are already heavily connected to other banks. Banks do not actively hedge these counterparties; rather, they are more likely to increase exposures by selling credit protection on them. They also show that these linkages strongly correspond with measures of bank tail risk. Overall, the results suggest the network formation process amplifies risk propagation through nonbank linkages in opaque financial markets.

### **Keynote: Stablecoins and Payments Innovations**

Governor Christopher J. Waller of the Board of Governors of the Federal Reserve System delivered the traditional keynote talk by a regulator, speaking on “Reflections on Stablecoins and Payments Innovations.” Governor Waller noted how the US payments system is undergoing a revolution driven by advances in technology, a circumstance which in turn raises questions about how regulators, such as the Federal Reserve, should address the risks in the revolution. He focused his address on one recent and quickly growing payment technology: stablecoins, defined by Governor Waller as “a type of digital asset designed to maintain a stable value relative to a national currency or other reference assets.” Stablecoins can serve as safe and liquid assets in the decentralized finance (DeFi) world of crypto assets, but recently there has been interest in their use in retail payments. The possibility of stablecoins as a retail payment option has generated interest among regulators, including a recent report by the President’s Working Group on Financial Markets (PWG), which argued that Congress should limit the issue of stablecoins to banks and other insured depository institutions.

Governor Waller agreed with the PWG that some degree of supervision and regulation of stablecoin issuers was

needed to address three major risks. First is the danger of a run on stablecoins, which if they became popular might have adverse effects similar to a run on a bank. Second, if stablecoins become a large part of the payments system, any failure could have bad effects across the system. And third, rapid scaling that creates a dominant stablecoin could give it monopoly power in the payments system. Thus, Governor Waller did not object to letting banks with deposit insurance issue stablecoins. However, he argued that it would be wrong to limit stablecoins to banks. Much of bank regulation is geared to protect lending, not payments, and would restrict the sort of competition that can promote efficiency and innovation in payments. Regulation should support the safety and soundness of stablecoin issuers, such as by providing transparency about the reserve fund that backs the coins; but provided the issuer does not provide credit or engage in maturity transformation, there should be no need for the full range of banking regulations.

### **Keynote: Central Banks and Liquidity**

The academic keynote was presented by Professor Viral Acharya, who offered “Liquidity, Liquidity Everywhere but Not a Drop to Use” based on joint research with Raghuram G. Rajan. Professor Acharya starts from the observation that despite central banks’ having flooded the system with liquidity via an unprecedented expansion of central bank balance sheets, the liquidity conditions of the money markets seem surprisingly fragile. Examples include the repo rate spike of September 2019 and the “dash for cash” of March 2020. Could it be that the supply of reserves somehow increases the demand for them?

When central banks expand their balance sheets, it is generally an exchange of liquid bank reserves for other assets. However, the increase in reserves may often be financed by increases in bank liabilities such as deposits. In addition, banks may also write contingent claims against reserves, such as lines of credit, in order to earn fees. Often, these short-term or contingent commercial bank liabilities will also be claims on liquidity. In ordinary times, the central bank balance sheet expansion will typically increase the liquidity in the system. In times of stress, however, investors may want to use these claims, and the demand for liquidity increases. Thus, the increased supply of liquidity can create an increased demand, and the net effect is unclear. Healthy banks, desiring to maintain unimpeachable balance sheets, may provide only a limited amount of reserves to the interbank market and thus contribute significantly to liquidity shortages. Acharya and Rajan find that liquidity regulation and supervisors’ viewing liquidity shortages at individual banks more adversely when the aggregate supply of reserves is high can amplify such encumbrances on reserves. Consequently, central bank balance sheet expansion may not eliminate episodes of stress; it may even exacerbate their effects. This view may also attenuate any positive effects of central bank balance sheet expansion on economic activity.

### **Conclusion**

The COVID-19 pandemic came as a large external shock to the economic and financial systems of the world. Central banks and governments were able to dust off the crisis playbooks developed during the great financial crisis of 2008, adapting and extending programs to meet new challenges. The second major financial crisis in recent memory provided a further chance to understand market vulnerabilities and the appropriate responses, but it also highlighted new complications from evolving markets, be they data breaches, stablecoins, new connections, or fiscal deficits.

### **Endnotes**

1. Special thanks go to the discussants in the academic paper sessions, Simon Gilchrist of New York University for the fiscal and monetary responses session, Zhiguo He of the University of Chicago Booth School of Business for the shocks and vulnerabilities session, and Nagapurnanand Prabhala of the Johns Hopkins Carey Business School for the externalities session.
2. For the panel on fiscal and monetary responses, the moderator was Anil Kashyap of the University of Chicago Booth School of Business, with panelists Claudia M. Buch, vice president of the Deutsche Bundesbank; and Michael Faulkender of the Robert H. Smith School Business at the University of Maryland.

For the panel on shocks and vulnerabilities, the moderator was Chester Spatt of the David A. Tepper School of Business at Carnegie Mellon University, with panelists Mark J. Flannery of the University of Florida Warrington College of Business; Gregory Hopper, global head of enterprise risk, Goldman Sachs Group; and Ananth Madhavan, global head of research for ETF and index investing, Black Rock.

For the panel on externalities, the moderator was Patricia Mosser of the Columbia School of International and Public Affairs, with panelists Michael Fratantoni, chief economist for the Mortgage Bankers Association; Alexandra Friedman, deputy director of the Office of Cybersecurity and Critical Infrastructure, US Department of the Treasury; Billy Pizer, vice president for research and policy engagement, Resources for the Future; and Emin Gun Sirer, founder and chief executive officer of Ava Labs.

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