Banking on Uninsured Deposits

Itamar Drechsler, Alexi Savov, Philipp Schnabl, Olivier Wang

The regional bank crisis of 2023 raises the question: what is the impact of interest rates on the liquidity risk of banks? Rising interest rates led to losses on banks' long-term loans and securities. In the case of Silicon Valley Bank (SVB), these losses triggered a run. A key factor was the composition of SVB's depositors, the vast majority of whom were uninsured. Uninsured depositors have an incentive to run when the value of their claims exceeds the value of the bank if other depositors also run. Since this value is the market value of the bank's assets, the rise in interest rates makes a run by uninsured depositors more likely. The crisis was thus driven by the interaction of interest rates and liquidity risk.

We provide a model of this interaction and analyze how banks can manage the risks that it poses. Prior work shows that banks hedge the interest rate risk of their assets with their deposit franchise (Drechsler et al., 2021). This works because deposit rates are low and insensitive to market rates, i.e., they have a low beta. The low beta allows banks to earn higher spreads on deposits when interest rates rise. The higher spreads make the value of the deposit franchise rise, offsetting the losses on banks' assets.

For this hedge to work, deposits must remain in the bank. Yet there are two reasons depositors may leave. We incorporate them into our model. The first is that depositors may seek higher-rate alternatives such as money market mutual funds. This source of outflows is the mechanism of the deposits channel of monetary policy (Drechsler et al., 2017). It is a relatively mild source because banks choose to endure it in exchange for higher total profits. Nevertheless, if banks do not take rate-induced outflows into account, these outflows diminish the value of the deposit franchise and can serve as a spark for the second type of outflow. Our first main result provides a formula for optimal interest rate risk hedging against these normal rate-driven outflows. We show that the bank should act as if its deposit beta is effectively higher when its deposit franchise is valuable (at high rates), and lower when it is losing money (at low rates).

The second type of outflow is a run by uninsured depositors. A run equilibrium arises because the run itself destroys the deposit franchise by denying banks the opportunity to earn future spreads on deposits. The destruction of the deposit franchise is an extreme form of the fire sale liquidation of loans in Diamond and Dybvig (1983). Even if a bank's assets are fully liquid, its deposit franchise is not, opening the door to a run. The run equilibrium arises when interest rates are sufficiently high. At low rates, the deposit franchise is worth relatively little, hence even if it is destroyed the bank has enough assets to cover withdrawals. But when interest rates rise, the value of the assets declines and the value of the deposit franchise rises. The value of the bank becomes more dependent on the value deposit franchise, and this supports the run equilibrium.

Our second main result is that a rise in interest rates increases a bank's liquidity risk. This

is true even if the bank is fully interest-rate hedged in the sense that its overall value (assets minus liabilities plus deposit franchise) is insensitive to interest rate shocks outside the run equilibrium. To mitigate the increase in liquidity risk, the bank's optimal risk management policy is to shorten the duration of its assets ex ante. We also provide a formula for this optimal duration. The formula shows that the bank should act as if its deposit beta is higher than it is absent a run. The amount by which the effective beta is higher depends on the share of uninsured deposits. When the uninsured share is large, a run destroys more of the bank's value. This greater liquidity risk induces the bank to set a lower duration ex ante. As interest rates rise, optimal liquidity risk management implies a further reduction in asset duration. Thus, banks become even less hedged to a drop in interest rates. The reason is again the increased liquidity risk that the bank faces from the greater possibility of a run and the greater destruction in value from a run given the increased value of the deposit franchise.

The bank faces a dilemma between managing liquidity risk and interest rate risk. Shortening duration to hedge liquidity risk is not a perfect solution because the bank stands to lose if interest rates fall, even if the run-free equilibrium prevails. This is because at low rates deposits become unprofitable (deposit spreads are insufficient to cover operating costs). With a shortened duration, the bank's assets do not fully offset the decline in the value of the deposit franchise. This can make the bank undercapitalized or even insolvent. The bank becomes a "zombie bank". Thus, while liquidity risk shortens the optimal asset duration, this creates risks from a fall in rates.

We propose a resolution to this dilemma that calls for a form of contingent liquidity regulation through options: banks should buy a combination of short-term assets and receiver swaptions that allow them to extend the duration of assets to hedge interest rate risk as interest rates go down. Equivalently they can hold long-term assets, as they do now, but must combine them with payer swaptions to hedge the liquidity risk arising at high rates.

In ongoing research we analyze our model's implications for the design of liquidity and capital regulations. For instance, we show that the state-dependence of liquidity risk provides a new rationale for increasing capital requirements when interest rates go up to prevent runs. This pure interest rate effect is very distinct from the usual rationales for countercyclical capital buffers.

The key trade-off in our model is the tension between the bank's dual objective of hedging its interest rate risk and its liquidity risk. Due to the behavior of the deposit franchise, hedging interest rate risk pushes the bank to set a long asset duration. On the other hand, hedging liquidity risk pushes it to set a short duration because liquidity risk is increasing in interest rates. The sole exception to this is the special case when uninsured deposits do not contribute to a bank's deposit franchise. In this case a run destroys nothing. It happens when uninsured deposits pay the market interest rate, i.e. their beta is one, and incur no operating costs. It is then optimal to hold short-term assets against uninsured deposits both from an interest-rate and liquidity-risk hedging perspective. The run equilibrium disappears.

This special case is interesting because it arguably reflects the banking system prior to the last decade. As shown by Drechsler et al. (2023), until 2012 the large majority of uninsured deposits were large time deposits. Large time deposits are effectively wholesale funding. They pay competitive rates and do not require expensive branch networks. Given this, it is optimal for the bank to park them in short-term assets for both interest rate and liquidity reasons.

After 2012, uninsured deposits shifted toward checking and savings. In the case of Silicon Valley Bank, almost all of its uninsured accounts were corporate checking. These have a high operating cost and a low interest-rate sensitivity (high deposit spread when rates rise). As our model shows, these features push toward high asset duration. However, they are uninsured, which pushes toward lower duration. SVB appears to have ignored the second consideration (and may have overdone the first). More broadly, our model implies that uninsured checking and savings accounts are a potential source of instability.

Overview of methodology and preliminary results

Hedging Interest Rate Risk with Deposit Outflows. We model a bank with a deposit franchise facing two kinds of deposit outflows: normal "rate-driven" outflows, and runs by uninsured depositors. The deposit franchise is an intangible assets that yields a stream of income equal to deposit spreads $r(1-\beta)$ (where r is the market interest rate and βr is the deposit rate) minus operating costs c times the deposit base adjusted for outflows.

Our first main result is a formula for interest rate risk hedging in the presence of rate-driven outflows. The bank should hedge according to an effective deposit beta $\tilde{\beta} = \beta + w' \frac{(1+r)((1-\beta)r-c)}{r}$ where w' is the sensitivity of deposit outflows to interest rates (a "flow beta").

Interestingly the role of outflows is completely different at high vs. low interest rates. When $r > r_d + c$ the deposit spread is high enough to make deposit franchise profitable, and thus deposit outflows $w' > 0$ hurt the bank's value. In that case hedging the extra risk from outflows requires the bank to choose a shorter duration relative to the case without outflows. When $r < r_d + c$ instead, the effect of outflows is reversed, and outflows call for a *longer* duration. The reason is that at low rates, the bank is making losses on deposits once taking operating costs into account, hence an outflow of depositors in response to a rise in rates actually benefits the bank by reducing these losses and increasing the franchise value.

Which w' should banks and regulator use? In principle the strength of normal rate-driven outflows w' can be calibrated using estimates from Drechsler et al. (2017). A key assumption so far is that deposits are insured, hence the only outflows are driven by substitution towards high-yield money market funds, but concerns about the strength of the bank play no role. In the presence of uninsured depositors who respond to the bank's health, however, there is a feedback loop between outflows and the franchise value. A fall in the value of assets A may trigger run-driven outflows, and the resulting fall in the deposit franchise value can further reduce V, which leads to more outflows, and so on. This means that the effective beta is potentially unstable.

Liquidity Risk from the Uninsured Deposit Franchise. Suppose now that there are two kinds of deposits: insured and uninsured deposits. The previous analysis applies to insured deposits.

The key difference is that uninsured deposit outflows also depend on the bank's solvency. The sensitivity of uninsured depositors' withdrawals to asset values captures the possibility of runs. We assume that the fraction λ of uninsured depositors who do not run is an increasing function of the bank's solvency ratio v, given by the ratio of bank value over

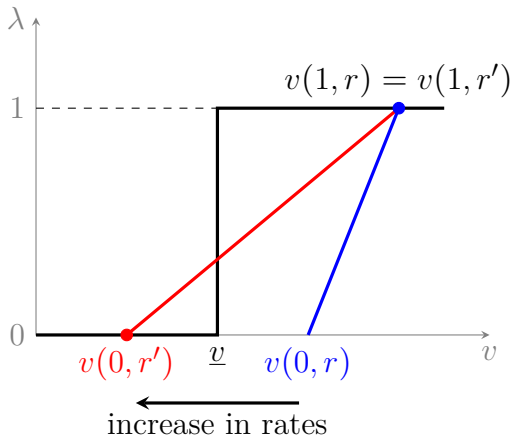


Figure 1: Run-free equilibrium (blue dot), run equilibrium (red dot).

deposits v. Therefore the uninsured outflows can be higher than the insured one because uninsured depositors are more yield-sensitive ("high β") but also due to the concerns about bank assets.

The uninsured deposit franchise is fragile because its value relies on uninsured depositors remaining with the bank. Figure 1 illustrates how this opens the door to multiple equilibria. While this multiplicity can be viewed as a special case of Diamond and Dybvig (1983), it is also different because the fragility of the deposit franchise value does not depend on the technological or financial illiquidity of assets; it is an intrinsic property. Moreover this perspective brings new issues regarding hedging and regulation.

Hedging Interest Rate Risk versus Liquidity Risk: the Dilemma. How does the level of interest rates r affect the bank's liquidity risk? One key insight is that liquidity risk and the likelihood of the "bad equilibrium" with runs increases with interest rates, and this can happen *even if the bank is hedged against the interest rate risk induced by the good equilibrium.*

The bank faces a dilemma, illustrated in Figure 1. Suppose the bank initially hedges assuming the good equilibrium prevails. This strategy ensures that as r increases, $v(\lambda = 1, r)$ is unchanged hence the good no-run equilibrium remains an equilibrium. However, a byproduct is that the value assuming uninsured depositors run $v(\lambda = 0, r)$ is then unhedged, as in general it is impossible to hedge both $v(\lambda = 0, r)$ and and $v(\lambda = 1, r)$.

Starting from a run-free equilibrium, hedging liquidity risk requires ensuring that $v(\lambda = 0, r)$ does not fall below the run-triggering threshold $\underline{v}$. This can be done by choosing assets hedging $v(\lambda = 0, r)$, effectively ignoring the negative duration provided by the potentially instable uninsured deposit franchise.

We show that here again this strategy can be reinterpreted as hedging without outflows but against an effective beta that exceeds the actual deposit beta. The bank can hedge against liquidity risk by using an even higher effective beta $\hat{\beta}$, which increases with the share of uninsured deposits.

A bank with a larger share of uninsured deposits can hedge against the liquidity risk arising from higher rates by shortening the duration of its assets. But going short (by using

a high effective beta) does not solve everything. Given this conservative strategy, the bank ensures that the equilibrium without runs prevails, and thus that its value is $v(1, r)$. However the duration of assets is now too short to offset the loss in franchise value when interest rates go down. Banks face a dilemma as there is no duration that allows them to hedge both the interest rate risk (in the good equilibrium) and the liquidity risk (arising from the bad equilibrium).

Shortening duration is not a perfect solution because the bank stands to lose if interest rates fall. This is because at low rates deposits become unprofitable as deposit spreads are insufficient to cover the bank's operating costs. With a shortened duration, the bank's assets cannot fully offset the decline in the value of the deposit franchise. This can make the bank undercapitalized when rates fall, generating debt overhang and risk-shifting incentives. In the extreme, the bank can become an insolvent "zombie bank". Thus, while liquidity risk shortens the optimal asset duration, this creates risks from a fall in rates.

A resolution: Swaptions. A hedging strategy that takes into account both risks resembles a combination of short duration assets to hedge against increasing liquidity risk as rates go up, combined with receiver swaptions to hedge against interest rate risk from the fall in deposit franchise as rates go down.

Hedging both the liquidity risk on the upside and the interest rate risk on the downside requires an asset payoff that is extremely convex. When r is above a threshold r^* (corresponding to a profitable uninsured deposit franchise) assets must have a short duration, while for r below r^* assets must have a long duration. This profile can be implemented by adjusting assets continuously, but more simply by using options: either by holding long-term assets combined with payer swaptions with strike r^*, or by holding short-term assets combined with receiver swaptions with the same strike (these two strategies are equivalent by put-call parity).

Banks are already active in the swaption market in order to hedge the negative convexity of their MBS portfolio induced by prepayment as rates fall. Our model highlights another reason why banks with a large uninsured deposit base should buy—or be mandated to buy—swaptions.

Capital Requirements. Our model has implications for how capital requirements should adjust with interest rates. Suppose that regulators can require banks to issue equity to achieve a solvency ratio $v \geq \bar{v}$. The optimal capital requirement $\bar{v}(r)$ that prevents runs should increase with interest rates. The reason is that at higher rates, the more valuable deposit franchise makes bank value increase more with the fraction of remaining uninsured depositors λ, hence the red line is steeper. In order to rule out the run equilibrium the bank must issue more equity. It can then be combined with banks focusing on interest rate risk management. Our model provides a new rationale for state-dependent capital requirements; the underlying force is a pure interest rate effect related to the fragility of the deposit franchise value, and thus differs from standard arguments for countercyclical capital buffers.

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Conflict of interest statement

All authors declare that they do not have any financial or other interest that bears on the proposed work. None of the authors has ties to financial institutions or firms that may be affected by the proposed research.

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Public Policy Relevance

Rising interest rates lead to losses on banks' long-term loans and securities. For example, in the case of Silicon Valley Bank (SVB), these losses triggered a run. Our work examines optimal bank liquidity and risk management when interest rates change. This is a first-order public policy issue given the welfare cost of bank runs, their effect on financial stability, and the tendency of regulators to engage in bank bailouts.

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Glucksman Prize for best paper, 2015-2016
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Articles (published or forthcoming):
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6. Drechsel, Thomas, Itamar Drechsler, David Marques-Ibanez, and Philipp Schnabl, "Who Borrows From the Lender of Last Resort?", *Journal of Finance*, 71(5), October 2016, 1933-1974, Lead article.
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7. Acharya, Viral, Itamar Drechsler and Philipp Schnabl, "A Pyrrhic Victory? Bank Bailouts and Sovereign Credit Risk", *Journal of Finance,* 69(6), December 2014, 2689-2739.
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11. Drechsler, Itamar and Amir Yaron, "What's Vol Got To Do With It", *Review of Financial Studies,* 24(1), January 2011, 1-45, Lead Article.
    - Winner of the Best Paper Award at the 2009 Utah Winter Finance Conference

Working Papers:

12. Drechsler, Itamar, Alexi Savov, and Philipp Schnabl, "Credit Crunches and the Great Stagflation," March 2023.

13. Drechsler, Itamar, Alan Moreira, and Alexi Savov, "Liquidity and Volatility", October 2021, under revision for 2nd round resubmission to Journal of Financial Economics.

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Other Articles:

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- A Model of Monetary Policy and Risk Premia (with I. Drechsler and P. Schnabl), *Journal of Finance* 73 (1), February 2018, 317-373
  Amundi Pioneer Prize (Distinguished Paper)
- The Macroeconomics of Shadow Banking (with A. Moreira), *Journal of Finance* 72 (6), December 2017, 2381-2432
  Lead article
- The Deposits Channel of Monetary Policy (with I. Drechsler and P. Schnabl), *Quarterly Journal of Economics* 132 (4), November 2017, 1819-1876
  SFS Finance Cavalcade Award for Best Paper in Corporate Finance
  Glucksman Prize for Best Paper in Finance, NYU Stern
- Have Financial Markets Become More Informative? (with J. Bai and T. Philippon), *Journal of Financial Economics 122* (3), December 2016, 625-654
- The Price of Skill: Performance Evaluation by Households
  Journal of Financial Economics 112 (2), May 2014, 213-231
- The Puzzle of Index Option Returns (with G. Constantinides and J. Jackwerth)
  The Review of Asset Pricing Studies 3 (2), June 2013, 229-257
- Asset Pricing with Garbage
  Journal of Finance 66 (1), January 2011, 177-201
  Smith Breeden Prize (Distinguished Paper)

Working papers:

- Credit Crunches and the Great Stagflation (with I. Drechsler and P. Schnabl), March 2022
- The Financial Origins of the Rise and Fall of American Inflation (with I. Drechsler and P. Schnabl), February 2020
  Winner, 2020 Yuki Arai Faculty Research Prize in Finance, NYU Stern
- Liquidity and Volatility (with I. Drechsler and A. Moreira), September 2021
  Revise and Resubmit, *Journal of Financial Economics*

Honors and awards:

- Brattle Group Prize (Distinguished Paper), 2022
- Yuki Arai Faculty Research Prize in Finance at NYU Stern, 2020
- Amundi Pioneer Prize (Distinguished Paper), 2018
- WFA Award for Best Paper on Financial Institutions, 2018
- Yuki Arai Faculty Research Prize in Finance at NYU Stern, 2018
- Referee of the Year, Review of Financial Studies, 2018
- Glucksman Prize for Best Paper in Finance at NYU Stern, 2016
- Distinguised referee, Review of Financial Studies, 2016
- SFS Finance Cavalcade Award for Best Paper in Corporate Finance, 2015
- Smith-Breeden Prize (Distinguished Paper), 2011
- Sanford J. Grossman Fellowship in Honor of Arnold Zellner, 2009—2010

- John Leusner Fellowship, 2010
- CRSP Summer Paper Award, 2006
- Phi Beta Kappa honorary academic society, 2005

Seminar presentations:

- 2022: Columbia GSB, Stockholm School of Economics, London School of Economics
- 2021: Federal Reserve Board, Norges Bank
- 2020: Ohio State University
- 2019: Chicago Booth, UCLA Anderson, Northwestern Kellogg, University of Illinois, Stockholm School of Economics, Dartmouth Tuck, Hong Kong University of Science and Technology, Chinese University in Hong Kong, Norges Bank
- 2018: Harvard University, Washington University in St. Louis, Purdue University
- 2017: University of Rochester, University of Amsterdam, Baruch College
- 2016: Wharton, UCLA Anderson, London Business School, London School of Economics, Toulouse School of Economics, Swiss Finance Institute, Federal Reserve Board
- 2015: University of British Columbia, Harvard University, Temple University
- 2014: Princeton University, Federal Reserve Board of Governors, CUNY
- 2013: Columbia GSB, Northwestern Kellogg, University of Wisconsin, University of New South Wales, Australia National University, University of Sydney, Griffith University, Brisbane
- 2012: Yale University, Southern Methodist University, University of Texas at Dallas
- 2011: McGill University, Drexel University
- 2010: USC Marshall School, UC Berkeley Haas, Washington University in St. Louis Olin School, ASU Carey School, Harvard Business School, NYU Stern, Wharton, MIT Sloan, UCLA Anderson, Stanford GSB, Wisconsin School of Business, Vanderbilt University Owen School
- 2009: Chicago Booth Finance Workshop, Chicago Booth Student Brownbag, University of Northern Illinois

Conference presentations:

- 2022: NBER SI Macro, Money and Financial Frictions, Red Rock Finance Conference
- 2021: AFA Meetings, SFS Cavalcade, WFA Meetings
- 2020: NBER Spring Asset Pricing, NBER SI Asset Pricing, Utah Winter Finance Conference, HEC-McGill Winter Finance Workshop
- 2019: NBER Summer Institute Macro, Money and Financial Frictions, Federal Reserve Short-Term Funding Markets Conference, AFA Meetings
- 2018: 10th Anniversary of the Financial Crisis Conference at Chicago Booth, NBER Capital Markets and the Economy, NBER Spring Asset Pricing, NBER Spring Monetary Economics, AEA Meetings, Econometric Society Meetings, SFS Cavalcade,

WFA Meetings, Duke-UNC Asset Pricing Conference, Wharton Conference on Liquidity and Financial Fragility, Doug Diamond 65th Birthday Conference

- 2017: NBER Spring Asset Pricing, NBER SI Corporate Finance, NBER SI Money, Macro, and Financial Frictions, Five-Star Conference at NYU Stern, Central Bank of Chile Annual Conference, Federal Reserve Bank of San Francisco Conference on Financial Research, London Business School Summer Symposium, RFS FinTech Workshop
- 2016: NBER Fall Corporate Finance, NBER SI Corporate Finance, NBER International Seminar on Macro, NBER Long Term Investing Conference, Micro Foundations for Macro Finance Conference at NYU, INET Seminar Series at Columbia University, AFA Meetings
- 2015: NBER/NSF/CEME Mathematical Economics Conference, Chicago Booth Asset Pricing Conference, Fifth FARFE Conference, "Monetary Policy Implementation and Transmission in the Post-Crisis World" at the Federal Reserve Board, NBER SI Corporate Finance, NBER SI Asset Pricing, AFA Meetings, Atlanta Fed Financial Markets Conference
- 2014: NYU Five Star Conference, NBER Fall Asset Pricing, 4th Macro Finance Society Workshop, Micro Foundations for Macro Finance conference at University of Amsterdam, NBER SI Asset Pricing, Paul Woolley Centre conference at London School of Economics, Safe Assets and the Macroeconomy conference at London Business School, WFA Meetings, 3rd Macro Finance Society Workshop, Texas Finance Festival, AFA Meetings, Econometric Society, UBC Winter Finance Conference
- 2013: NBER Fall Monetary Economics, Kellogg Junior Finance Conference, EFA Meetings
- 2012: NBER SI Asset Pricing, CITE Conference at the University of Chicago
- 2008: WFA Meetings

Teaching:

- New York University Stern School of Business: Foundations of Finance (undergraduate and MBA), 2011—present; Asset Pricing Theory (PhD course) 2018—present; Seminar in Financial Intermediation (PhD course) 2018—present

Referee:

- American Economic Review, Quarterly Journal of Economics, Journal of Political Economy, Journal of Finance, Review of Financial Studies, Journal of Financial Economics, Review of Economic Studies, Journal of Monetary Economics, Journal of Economic Theory, Journal of Financial and Quantitative Analysis, Management Science, Journal of International Economics, European Financial Management Journal, Journal of Empirical Finance

Dissertation committee:

- Sebastian Hillenbrand, Hyeyoon Jung, Bernard Herskovic, Matteo Crosignani, Siddharth Vij, Xuyang Ma, Aaditya Iyer, Mohsan Bilal, Saptarshi Mukherjee, Wei Xiang, Jiacheng Wu

Philipp SCHNABL

Date: December 1st, 2022

Office Contact

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KMC 9-60, 44 West Fourth Street, New York, NY 10012
Tel: +1-212 998 0356
E-mail: schnabl @stern.nyu.edu

Editorial Positions

Co-Editor, *Journal of Financial Economics*, July 2021 – present
Associate Editor, *Journal of Finance*, January 2016 – June 2021
Associate Editor, *Review of Financial Studies*, April 2016 – March 2019
Associate Editor, *Management Science*, July 2014 – July 2016
Associate Editor, *Journal of Financial Intermediation*, September 2013 – present

Academic Appointments

New York University, Stern School of Business
- Martin J. Gruber Professor in Asset Management, September 2019 – present
- Professor of Finance, September 2018 – present
- Bank and Financial Analysts Faculty Fellow, September 2017 – April 2019
- Associate Professor of Finance (with tenure), September 2015 – August 2018
- Associate Professor of Finance (without tenure), September 2014 – August 2015
- Assistant Professor of Finance, July 2008 – August 2014

New York University, Salomon Center for the Study of Financial Institutions
- Sidney Homer Director, July 2018 – present

National Bureau of Economic Research
- Research Associate, April 2016 – present
- Faculty Research Fellow, Corporate Finance, April 2012 – March 2016

Center for Economic Policy Research
- Research Fellow, Financial Economics, October 2015 – present
- Research Affiliate, Financial Economics, July 2011 – September 2015

Financial Intermediation Research Society
- Director, June 2020 – present

Commodity Futures Trading Commission
- Consultant, June 2018 – present

Columbia University, Graduate School of Business
- Visiting Research Scholar, January 2018 – June 2018

New York Federal Reserve Board
- Visiting Scholar, January 2017 – December 2017

Education

Harvard University, Ph.D. in Political Economy and Government (Economics Track), Advisors: Andrei Shleifer, Jeremy Stein, Sendhil Mullainathan, Edward Glaeser, August 2003 – May 2008

Harvard University, Kennedy School, Master in Public Administration, August 2001 – May 2003

Vienna University of Economics and Business Administration, B.A./M.A. (Business Economics), September 1994 – December 2000

Articles (published or forthcoming)

1. Paravisini, Daniel, Veronica Rappoport, and Philipp Schnabl, "Specialization in Bank Lending: Evidence from Exporting Firms", *Journal of Finance*, forthcoming

2. Gopal, Manasa and Philipp Schnabl, "The Rise of Finance Companies and FinTech Lenders in Small Business Lending", *Review of Financial Studies*, 35(11), November 2022, 4859-4901
   - Editor's Choice Article (lead article)

3. Drechsler, Itamar, Alexi Savov and Philipp Schnabl, "How Monetary Policy Shaped the Housing Boom", *Journal of Financial Economics*, 144(3), June 2022, 992-1021

4. Drechsler, Itamar, Alexi Savov and Philipp Schnabl, "Banking on Deposits: Maturity Transformation without Risk", *Journal of Finance*, 76(3), June 2021, 1091-1143
   - Brattle Group Prize, Distinguished Paper Prize, *Journal of Finance*, 2021
   - Yuki Arai Prize for the best research paper in finance at NYU Stern, 2018
   - Western Finance Association, Best paper on financial institutions, 2018

5. Fuster, Andreas, Matthew Plosser, Philipp Schnabl, and James Vickery, "The Role of Technology in Mortgage Lending", *Review of Financial Studies*, 32(5), May 2019, 1854-1899

6. Drechsler, Itamar, Alexi Savov and Philipp Schnabl, "Liquidity, Risk Premia, and Financial Transmission of Monetary Policy", *Annual Review of Financial Economics*, November 2018, 10(1), 309-328

7. Drechsler, Itamar, Alexi Savov and Philipp Schnabl, "A Model of Monetary Policy and Risk Premia ", *Journal of Finance,* February 2018, 73(1), 317-373
   - Amundi Pioneer Prize, Distinguished Paper Prize, *Journal of Finance*, 2018

8. Drechsler, Itamar, Alexi Savov and Philipp Schnabl, "The Deposits Channel of Monetary Policy", *Quarterly Journal of Economics,* November 2017, 132(4), 1819-1876
   - Glucksman First Place Award for "Best Working Paper in Finance", 2016
   - SFS Cavalcade 2015, Best Paper in Corporate Finance

9. Drechsler, Itamar, Thomas Drechsel, David Marques-Ibanez and Philipp Schnabl, "Who Borrows from the Lender of Last Resort?", *Journal of Finance,* October 2016, 71(5), 1833-1974
   - Lead Article

10. Paravisini, Daniel, Veronica Rappoport, Philipp Schnabl, and Daniel Wolfenzon, "Dissecting the Effect of Credit Supply on Trade: Evidence from Matched Credit-Export Data", *Review of Economic Studies,* 82(1), October 2015, 333-359
    - Rothschild Caesarea Center Annual Academic Conference Best Paper Award

11. Acharya, Viral, Itamar Drechsler and Philipp Schnabl, "A Pyrrhic Victory? Bank Bailouts and Sovereign Credit Risk", *Journal of Finance,* 69(6), December 2014, 2689-2793
    - Glucksman First Place Award for "Best Working Paper in Finance", 2012

12. Kacperczyk Marcin and Philipp Schnabl, "How Safe are Money Market Funds?", *Quarterly Journal of Economics,* 128 (3), August 2013, 1073-1122

13. Acharya, Viral, Gustavo Suarez and Philipp Schnabl, "Securitization without Risk Transfer", *Journal of Financial Economics*, 107(3), March 2013, 515-536
    - Lead Article

14. Philippon, Thomas and Philipp Schnabl, "Efficient Recapitalization", *Journal of Finance*, 68(1), February 2013, 1-42,
    - Lead Article

15. Schnabl, Philipp, "The International Transmission of Bank Liquidity Shocks: Evidence from an Emerging Market", *Journal of Finance*, 67(3), June 2012, 897-932
    - Brattle Group Prize, First Prize, *Journal of Finance*, 2021

16. Kacperczyk Marcin and Philipp Schnabl, "When Safe Proved Risked: Commercial Paper during the Financial Crisis of 2007/09", *Journal of Economic Perspectives*, 24(1), 29-50, 2010

17. Acharya, Viral and Philipp Schnabl, "Do Global Banks Spread Global Imbalances? Asset-Backed Commercial Paper during the Financial Crisis of 2007-2009", *IMF Economic Review,* 58(1), 37-73, August 2010

Working Papers

1. Drechsler, Itamar, Alexi Savov and Philipp Schnabl, "Credit Crunches and the Great Stagflation", May 2022

2. Drechsler, Itamar, Alexi Savov and Philipp Schnabl, "The Financial Origins of the Rise and Fall of American Inflation", February 2021
   - Yuki Arai Prize for the best research paper in finance at NYU Stern, 2020
   - Marshall Blume Prize in Financial Research (First Prize), University of Pennsylvania, 2021

Book Chapters and Conference Proceedings

1. Philipp Schnabl, "Bank Capital Regulation and the Off-Ramp", in *Regulating Wall Street: Choice Act versus Dodd-Frank*, Eds. Matthew Richardson, Kermit Schoenholz, Bruce Tuckman, and Larry J. White, March 2017

2. Acharya, Viral, Itamar Drechsler and Philipp Schnabl, "A Tale of Two Overhangs: The Nexus of Financial Sector and Sovereign Credit Risks", Banque de France, *Financial Stability Review*, April 2012

3. Kacperczyk Marcin and Philipp Schnabl, "Money Market Funds: How to Avoid Breaking the Buck", in *Regulating Wall Street,* Eds. Viral Acharya, Thomas Cooley, Matthew Richardson and Ingo Walter, John Wiley & Sons, November 2010

4. Mullainathan, Sendhil and Philipp Schnabl, "Does Less Market Entry Regulation Generate More Entrepreneurs? Evidence from a Regulatory Reform in Peru", in: *International Differences in Entrepreneurship*, Eds. Joshua Lerner and Antoinette Schoar, University of Chicago Press, June 2010

5. Philippon, Thomas and Philipp Schnabl, "An Example of Efficient Recapitalization under Debt Overhang", in: *46th Annual Conference on Bank Structure and Competition*, Conference Proceedings, Federal Reserve Bank of Chicago, May 2010

6. Acharya, Viral and Philipp Schnabl, "How Banks Played the Leverage Game", in *Restoring Financial Stability: How to Repair a Failed System*, Eds. Viral Acharya and Matthew Richardson, John Wiley & Sons, March 2009

7. Schnabl, Philipp "New Evidence on the International Bank Lending Channel", in: *44th Annual Conference on Bank Structure and Competition*, Conference Proceedings, Federal Reserve Bank of Chicago, May 2008

Teaching

Doctoral Courses

NYU Stern, Financial Intermediation, 2019 – present
NYU Stern, Empirical Corporate Finance, 2011 – present

MBA Courses

NYU Stern, Corporate Finance, 2011 – present
NYU Stern, Financial Crisis Course (jointly with other instructors), 2009

Undergraduate Courses

NYU Stern, Corporate Finance, 2008 – 2009 and 2015

Academic Awards and Honors

- Keynote Speaker, Summer Research Conference-Indian School of Business, 2022
- Keynote Speaker, European Central Bank Research Workshop on Banking Analysis for Monetary Policy, 2022
- Brattle Group Prize, Distinguished Prize, *Journal of Finance*, 2022
- Keynote Speaker, Fed/UMD Short-Term Funding Conference, 2022
- Keynote Speaker, 34th Australasian Finance and Banking Conference, 2021
- Keynote Speaker, Barcelona GSE Summer Forum, Financial Intermediation and Risk, 2021
- Marshall Blume Paper Prize in Financial Research, Wharton University, 2021
- Yuki Arai Prize for the best research paper in finance at NYU Stern, 2020
- Amundi Pioneer Prize, Distinguished Paper Prize, *Journal of Finance*, 2018
- Western Finance Association, Best paper on financial institutions, 2018
- Yuki Arai Prize for the best research paper in finance at NYU Stern, 2018
- Excellence in Refereeing Award 2017, *American Economics Review*, 2018
- Distinguished Referee Award, *Review of Financial Studies*, May 2017
- New York Federal Reserve Bank, Visiting Scholar, January 2017-June 2017
- Glucksman First Place Award for "Best Working Paper in Finance", NYU Stern, 2016
- Distinguished Referee Award, *Journal of Financial Intermediation*, May 2016
- Chicago Booth, Initiative on Global Markets (IGM), Visiting Fellow, 2015

- SFS Cavalcade 2015, Best Paper in Corporate Finance, 2015
- Brattle Group Prize, First Prize for best Corporate Finance Paper in *Journal of Finance* in 2012, 2013
- Glucksman First Place Award for "Best Working Paper in Finance", NYU Stern, 2012
- Rothschild Caesarea Center Annual Academic Conference Best Paper Award, 2011
- Pascucci Dissertation Completion Fellowship, Harvard University, 2007
- Justice, Welfare and Economics Dissertation Fellowship, Harvard University, 2005
- Warburg Funds Research Grant, Harvard University, 2005
- Graduate Student Fellowship, Harvard University, 2003-2007
- Schumpeter Fellowship, Harvard University and Austrian Ministry of Education, 2001

Seminars and Conference Presentations (including scheduled)

2022/23 *Seminars:* Temple University, IMF, UCLA

Conferences: AFA, European Central Bank Research Workshop on Banking Analysis for Monetary Policy, Summer Research Conference-Indian School of Business

2021/22 *Seminars:* Bank of International Settlements, Boston College, Central European University, Chinese University of Hong Kong, Federal Reserve Board, Frankfurt School of Finance & Management, German Bundesbank, John Hopkins University (Carey), Northwestern University (Kellogg), Pennsylvania State University, Rutgers University, University of Hong Kong, University of Illinois Urbana-Champaign, University of Missouri (Mizzou), University of Minnesota (Carlson), University of Texas at Dallas, Wirtschaftsuniversitaet Wien

Conferences: AEA, CEPR Bank of Finland Conference, 34th Australasian Finance and Banking Conference, Fed/UMD Short-Term Funding Conference, University of Zuerich Conference

2020/21 *Seminars:* Australian National University, Central Bank of Turkey, Emory University, European Central Bank, New York Federal Reserve Bank (Capital Markets Group), Northeastern University, Southern Methodist University, University of British Columbia, Virtual Finance Workshop

Conferences: AFA, Barcelona Summer Forum, BPI La Caixa FinTech Conference, University of Wisconsin Madison Mini Conference, Review of Corporate Finance Studies Winter Conference

2019/20 *Seminars:* Chicago Booth, Federal Deposit Insurance Corporation, Cornell University, University of Virginia

Conferences: ECB Conference on Monetary Policy, NBER Asset Pricing

2018/19 *Seminars:* Brigham Young University, Carnegie Mellon, MIT Sloan, MIT Economics (Macro), Northwestern (Macro), Ohio State University, Stanford University, Yale University
Conferences: Chicago Booth 10th Anniversary of Financial Crisis Conference, BIS Research Meeting

2017/18 *Seminars:* Brandeis University, New York Federal Reserve, San Francisco Federal Reserve, University of Pittsburgh
Conferences: Stanford Institute for Theoretical Economics (Financial Regulation), International Research Forum on Monetary Policy, AEA

2016/17 *Seminars:* Berkeley, Columbia University, Duke University, Princeton University, University of Michigan, Yale University, Office of Financial Research
Conferences: NBER Corporate Finance, Philadelphia Federal Reserve Debt and Banking Conference, New York Fed Workshop on Monetary Policy

2015/16 *Seminars:* Boston College, Chicago Federal Reserve, Cornell University, LBS, LSE, University of Maryland, University of Minnesota, IMF/World Bank Joint Seminar, UCLA
Conference: AEA

2014/15 *Seminars:* Chicago Booth, Stanford University, Washington University in St. Louis, University of Urbana-Champaign, HEC Lausanne, University of Montreal, New York Federal Reserve
Conferences: AFA, NBER Corporate Finance, NBER Asset Pricing, SFS Cavalcade

2013/14 *Seminars:* Berkeley, Columbia, UCLA, USC, Wharton, Yale, Tuck School of Business
Conferences: AFA, UC Davis Finance Conference, University of Connecticut Risk Management Conference

2012/13 *Seminars:* Chicago Booth, MIT Sloan, Kellogg, UNC Kenan-Flagler, Tuck School of Business, University of Maryland, Pompeu Fabra University, Bocconi University, World Bank, Federal Reserve Board
Conferences: NBER Monetary Economics, NBER Risks of Financial Institutions, WFA, Chicago Federal Reserve Bank Structure Conference, ECB Global Research Forum

2011/12 *Seminars:* HBS, Indiana University, University of Bergen, University of Amsterdam, New York Federal Reserve
Conferences: NBER Corporate Finance, AFA, AEA, Econometric Society Meeting, Utah Winter Finance Conference, LSE Paul Woolley Centre Conference, New York

Federal Reserve Money and Payment Workshop, Minnesota Corporate Finance Conference, Deutsche Bank-Chicago Booth Symposium, IPA Small-Medium Enterprise Conference

2010/11 *Seminars:* University of Michigan, University of Binghamton, Philadelphia Federal Reserve
Conferences: NBER Corporate Finance, NBER Marco-Finance Meeting, NBER Risks of Financial Institutions, AEA, Stanford Institute for Theoretical Economics (SITE), Texas Finance Festival, European Finance Association Meeting (2x), Austrian Central Bank Resolution Workshop, CEPR Corporate Finance and Economic Performance Conference, Napa Conference on Financial Markets Research, Chile Corporate Finance Conference, Gerzensee Summer Symposium in Financial Markets, HEC-Tilberg Conference on Financial Intermediation and the Real Economy

2009/10 *Seminars:* University of Rochester, New York Federal Reserve Bank, Bank of England, Vienna University, Warwick Business School
Conferences: NBER Corporate Finance Meeting, NBER Summer Institute Joint Asset Pricing and Corporate Finance Meeting, AFA (2x), IMF Annual Research Conference, European Winter Finance Conference, DePaul University/Chicago Federal Reserve Bank, Darden International Finance Conference, Chicago Federal Reserve Bank Structure Conference, Western Finance Association Meeting, KDI Regulatory Reform Conference, Bank Crisis Prevention and Resolution Conference, Research Workshop on Bank Insolvency, Restructuring, and Recapitalization, Conference on Current Topics in Security Regulation, Financial Intermediation Research Conference (FIRS)

2008/09 *Seminars:* Baruch College, Bank of England, Banque de France, ECB
Conferences: SIFR Financial Crisis Conference, IMF (2x), Gerzensee Symposium in Financial Markets (2x), LSE Regulation Conference (2x), UBC Summer Conference

2007/08 *Seminars:* Chicago Booth, Columbia, Duke, Federal Reserve Board, LBS, LSE, MIT Sloan, NYU Stern, Kellogg, Stanford GSB
Conferences: NBER Entrepreneurship, European Economic Review Young Economist Workshop, Chicago Federal Reserve Bank Structure Conference, Inter American Development Bank

2006/07 NBER Entrepreneurship Pre-Conference, Northeast Universities Development Consortium Conference

Discussions (including scheduled)

2022/23 NBER Corporate Finance, AFA

2021/22	ECB-RFS Macro-Finance Conference, AFA
2020/21	NBER Corporate Finance, Federal Reserve Financial Stability Conference, ECB Conference on Monetary Policy
2019/20	AFA, AEA
2018/19	NBER Corporate Finance
2017/18	AFA, AEA, NBER Insurance Conference, NBER Corporate Finance
2016/17	AFA, AEA, Riksbank Macroprudential Conference
2015/16	AFA (2x), AEA (2x), University of Chicago Financial Regulation Conference, Princeton Financial Innovation Conference,
2014/15	AFA, Columbia University Safe Asset Conference, Stanford Workshop on the Rules of the Lender of Last Resort, Stanford University Monetary Policy Conference
2013/14	NBER Asset Pricing, NBER Risks of Financial Institution, NBER International Finance and Macroeconomics, AEA, SFS Cavalcade, IMF European Banking Conference, NYU-PENN Law & Finance Conference, USC Conference on Finance, Markets, and Organizations, GSB Columbia Conference on Corporate Governance around the World
2012/13	NBER Corporate Finance, AEA, BYU Conference
2011/12	NBER Corporate Finance, AFA, AEA, Econometric Society Meeting (2x)
2010/11	AFA, AEA, Econometric Society Meeting, EFA (2x), Chile Corporate Finance Conference
2009/10	AFA, New York Fed/NYU Conference, Financial Intermediation Research Conference
2008/09	New York Fed/NYU Conference, UNC/Duke Corporate Finance Conference, China International Financial Conference

Professional Services

Academic Board
Director, Financial Intermediation Research Society (FIRS), 2020-present

Conference and Session Organizer:
New York Fed/NYU Stern Conference, 2009 – present
CEBRA New York Conference, Track Chair, 2019
AFA, Session Organizer, Financial Intermediation, 2016, 2017
EFA, Track Chair, Financial Intermediation (Empirical), 2015
WFA, Associate Chairperson (Financial Institutions), 2014, 2021
Midwest Finance Association (Track Chair), 2016
NBER Corporate Finance, April 2013

Prize Committee:
Bernacer Prize, Selection Committee, September 2021 – present

Program Committee:
Utah Winter Finance Conference, 2019-present
Bocconi Baffi Carefin Banking Conference, 2017– present
New York Fed/NYU Stern Conference, 2009– present
Western Finance Association Annual Meeting, 2010– present
Financial Intermediation Research Society, 2010– present
Corporate Finance Conference Washington University in St. Louis, 2010– present
European Finance Association Meetings, 2011– present
EBRD-EBC-RoF Conference on Emerging Markets Banks, 2013
Wharton Conference on Liquidity and Financial Crises 2014– present
Bank performance, Financial Stability and the Real Economy Conference, 2015

Dissertation Committee:
Quirin Fleckenstein (in progress)
Iris Yao (in progress)
Sebastian Hillenbrand (2022, Harvard Business School, member)
Hyeyoon Jung (2021, New York Federal Reserve Bank, chair)
Gil Nogueira (2021, Bank of Portugal, chair)
Hongbum Lee (2021, Cornerstone Consulting, member)
Yosef Kalmenovitz (2019, Drexel University, chair)
Manasa Gopal, (2019, Georgia Tech University, chair)
Siddharth Vij, (2018, University of Georgia, chair)
Tianyue Ruan (2018, National University of Singapore, member)
Jessica Keeley (2017, Pace University, member)
Matteo Crosignani (2016, Federal Reserve Board, chair)
Jim Albertus (2016, Carnegie Mellon, member)
Michael Smolyansky (2015, Federal Reserve Board, member)
Emiliano Marambio Catan (2014, NYU Law School, member)
Erin Smith (2013, University of Rochester, member)
Farzad Saidi (2013, Cambridge Judge Institute, member)
Rustom Irani (2012, University of Illinois at Urbana-Champaign, member)
Sergio Vicente (2012, Universidad Carlos III de Madrid, member)
Xavier Giroud (2011, MIT Sloan, member)

Refereeing:
American Economic Review, Quarterly Journal of Economics, Journal of Political Economy, Econometrica, Review of Economic Studies, Journal of Finance, Journal of Financial Economics, Review of Financial Studies, Journal of Monetary Economics, Review of Finance, Journal of Financial and Quantitative Analysis, Review of Corporate Finance Studies, Journal of Financial Intermediation, Journal of Financial Markets, Journal of Monetary Economics, Journal of Money, Banking, and Credit, International Journal of Central Banking, AEJ: Economic Policy, Review of Economics and Statistics, Journal of Applied Finance, Journal of Empirical Finance, Journal of Globalization and Development, Journal of Industrial Economics, Journal of

International Economics, Journal of European Economic Association, European Economic Review, Economic Journal, International Economic Review, Management Science, Swiss National Bank Working Paper Series, Scandinavian Journal of Economics

University Service:
Finance Seminar Organizer, 2009/10 and 2014/15
Undergraduate Professional Club, Faculty Advisor, 2008 - 2013
Senior Faculty Recruiting Committee, Member, 2011
Ph.D. Admissions Committee, Member, 2016/17, 2017/18
Moderator, NYU Leadership Conference in Madrid, November 2017
Recruiting Coordinator, Finance Department, 2018/19

Public Service:
Bellagio Group, Member, January 2018 – present

Olivier Wang

New York University
Stern School of Business
Kaufman Management Center
44 West Fourth Street, 9-84
New York, NY 10012

olivier.wang@nyu.edu
www.olivierwang.com

Academic position

Assistant Professor of Finance, New York University Stern School of Business since 2019

Education

Ph.D. in Economics, Massachusetts Institute of Technology 2013-2019

B.A. in Mathematics, M.A. in Economics, École Normale Supérieure Ulm, Paris 2009-2013

Publications

1. Dynamic Oligopoly and Price Stickiness
   with Iván Werning
   American Economic Review, 112(8), August 2022

2. Let the Worst One Fail: A Credible Solution to the Too-Big-To-Fail Conundrum
   with Thomas Philippon
   Quarterly Journal of Economics, 2022
   Yuki Arai Faculty Research Prize in Finance, 2022

Working papers

3. Banks, Low Interest Rates, and Monetary Policy Transmission
   Journal of Finance, revise and resubmit

4. The Secular Decline in Interest Rates and the Rise of Shadow Banks
   with Andrés Sarto

5. Zombie Lending and Policy Traps
   with Viral V. Acharya and Simone Lenzu
   Yuki Arai Faculty Research Prize in Finance, 2023

6. Intermediary-Based Loan Pricing: Price and Non-Price Terms Across Markets
   with Pierre Mabille

7. Exchange Rate Pass-Through, Capital Flows, and Monetary Autonomy

Work in progress

8. Incentives to Decarbonize and Innovate: the Role of Net Zero Commitments
   with Viral V. Acharya and Robert Engle

9. Collusion and Price Stickiness
   with Iván Werning

10. Banking on Uninsured Deposits
    with Itamar Drechsler, Alexi Savov and Philipp Schnabl

Fellowships, honors, and awards

Yuki Arai Faculty Research Prize at NYU Stern	2022, 2023
AQR Top Finance Graduate Award	2019
European Central Bank Lamfalussy Fellowship	2018
Macro Financial Modeling Group Fellowship	2018
George and Obie Shultz Fund Grant	2018
Stanley and Rhoda Fischer Fellowship	2014-2015
MIT Kenan Sahin Presidential Fellowship	2013-2014
École Normale Supérieure Full Fellowship	2009-2013

Seminars and conference presentations (* selected conference presentations by coauthors)

2023
Seminars: USC Marshall, Stanford, LSE, University of Bonn, Pan-Asian Online Macro/Finance

Conferences: AFA New Orleans*, David Backus Memorial Conference at UCLA, Swiss Winter Conference on Financial Intermediation, Yale Junior Macro-Finance Conference, WFA San Francisco*, SED Cartagena*, EIEF Rome Junior Finance Conference*, SAET Paris

2022
Seminars: NYU, Villanova, Northwestern Kellogg, Sciences Po/Banque de France, HEC Paris, City University of New York

Conferences: AEA, RCFS Winter Conference, Bank of Italy/Bocconi Conference on Financial Stability and Regulation, SGF Conference (x2)*, Swiss Winter Conference on Financial Intermediation*, MFA*, INSEAD Finance Symposium*, Volatility and Risk Institute Conference on Macroeconomic Consequences and Implications of Decarbonization, FIRS Budapest (x2), Sciences Po/Banque de France/HEC Paris Summer Macro Workshop, WFA Portland (x2), SED Madison, Banco de Portugal 8th Conference on Financial Intermediation, EFA*, ECB Conference on Monetary Policy: bridging science and practice*, Bank of Canada Annual Economic Conference

2021
Seminars: Princeton, NYU, NYU Stern, UC Irvine, Paris School of Economics, Toulouse School of Economics, Norges Bank, Yale, Richmond Fed (virtual consultant), Bank of Italy, Sciences Po

Conferences: Adam Smith Workshop, NY Fed/NYU Financial Intermediation Conference, SED Minneapolis, NBER SI (Corporate Finance & Risks of Financial Institutions), CEBRA Annual Meeting*

2020
Seminars: NYU Stern, Central Bank of Chile, UT Austin, UNC Chapel Hill, Philadelphia Fed, Federal Reserve Board

Conferences: NBER SI (Impulse and Propagation Mechanisms)

2019
Seminars: Chicago Booth (macro, finance), NYU Stern, Fed Board, Harvard, St Louis Fed, Wharton, Stanford GSB

Conferences: Cambridge/INET New economics of exchange rate adjustment, Copenhagen Macro Days at Danmarks Nationalbank, AQR Top Finance Graduate Awards at Copenhagen Business School, Barcelona GSE Summer Forum (Financial Intermediation and Risk), Rising Five-Star Workshop at Columbia Business School

2018
Seminars: Banque de France

Conferences: EIEF Recent Developments in Macroeconomics*, SED Mexico City*, Chicago Fed Rookie Conference

Discussions

"Financial Vulnerability and Monetary Policy," by Adrian and Duarte, AFA 2023

"Internationalizing Like China," by Clayton, Dos Santos, Maggiori and Schreger, Macro Finance Society Workshop 2022

"Money and Banking in a New Keynesian Model," by Piazzesi, Rogers and Schneider, ASSA Meeting 2022

"Monetary Policy Disconnect," by Ballensiefen, Ranaldo and Winterberg, SNB Central Bank Conference on the Microstructure of Financial Markets 2021

"Low Rates and Bank Loan Supply: Theory and Evidence from Japan," by Balloch and Koby, SFS Cavalcade 2020

"Bank Market Power and Monetary Policy Transmission: Evidence from a Structural Estimation," by Wang, Whited, Wu and Xiao, SFS Cavalcade 2019

Professional activities

Referee: American Economic Journal: Macroeconomics, American Economic Review, Econometrica, IMF Economic Review, Journal of the European Economic Association, Journal of Finance, Journal of Financial Economics, Journal of Monetary Economics, Journal of Political Economy, Management Science, Quarterly Journal of Economics, Review of Economic Dynamics, Review of Economic Studies, Review of Financial Studies

Conference program committee member: EFA (2021-2023), SFS Cavalcade (2021-2023), FIRS (2023)

Courses taught

NYU
Foundations of Finance (FINC-UB.2, undergraduate)

MIT (Teaching Assistant)
Financial Markets and the Macroeconomy (14.07, undergraduate)
Intermediate Macroeconomics (14.05, undergraduate)
Contract Economics (14.281, PhD)
Psychology and Economics (14.137, PhD)