



Virtual
July
14-15

FOURTH BIENNIAL CONFERENCE ON
AUTOLENDING

Supervisory Research Forum (SURF)

FEDERAL RESERVE BANK  PHILADELPHIA
Consumer Finance Institute

Fourth Biennial Conference on **AUTOLENDING**

Supervisory Research Forum (SURF)

The Federal Reserve Bank of Philadelphia's Supervisory Research Forum (SURF) and Consumer Finance Institute (CFI) are the hosts for the **2021 Fourth Biennial Conference on Auto Lending**. This year, the conference will be held virtually. The sessions on the afternoons of Wednesday, July 14, and Thursday, July 15, are open to all; the sessions on Thursday morning are open only to staff from regulatory agencies.

With more than \$1.3 trillion in auto loans outstanding, the auto market and its portfolio trends, risks, and consumer impacts are strategically important to the economy. The conference agenda includes the status of the auto credit market, industry trends, auto pricing and dealer incentives, competition, and consumer protection. The event aims to provide regulators, industry experts, and academic contributors an opportunity to share insights on the auto market, auto lending, and consumer welfare in an emerging industry landscape.

Consumer Finance Institute


The Consumer Finance Institute (CFI) studies credit and payment markets to understand how they affect consumers and the economy. CFI produces state-of-the-art, policy-relevant research available to all. It also convenes academic experts, the financial industry, and the general public to collaborate on research and generate insights into fostering healthy household finances, a stable financial system, and a resilient regional and national economy.

Supervisory Research Forum

SURF is an initiative of the Supervision, Regulation, and Credit Department at the Federal Reserve Bank of Philadelphia. It is designed to facilitate interactive discussion, networking, and information sharing among economists and policy experts working in areas related to the supervision of retail credit at the federal regulatory agencies, in academia, and in the industry.



Fourth Biennial Conference on
AUTOLENDING

 JULY 14–15, 2021

Conference Organizing Committee

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Conference Sponsors & Advisory Committee

Robert M. Hunt

Federal Reserve Bank of Philadelphia

William G. Spaniel

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WEDNESDAY
JULY 14

Open to all

Fourth Biennial
Conference on

AUTO
LENDING

1:00 p.m.–1:15 p.m.

Welcome and Opening Remarks

James D. Narron

First Vice President, Federal Reserve Bank of Philadelphia

1:15 p.m.–1:45 p.m.

Auto Lending Under the COVID-19 Environment

Melinda Zabritski

Senior Director, Experian Automotive

1:45 p.m.–2:15 p.m.

Auto Market Update and Outlook for 2021 and Beyond

Patrick Manzi

Chief Economist, National Automotive Dealers Association

2:15 p.m.–2:30 p.m.

Break

2:30 p.m.–3:30 p.m.

Automation in Vehicles and Processes

Moderator: Joelle Scally, Federal Reserve Bank of New York

- **Electric Mobility After the Crisis and Long-Term Market Dynamics:**
Nick Laverty, McKinsey & Company
- **Rise of the Machines: The Impact of Automated Underwriting**
Amin Shams, Ohio State University, and **Mark Jansen** and **Hieu Nguyen**, University of Utah

3:30 p.m.–3:45 p.m.

Break

3:45 p.m.–4:45 p.m.

Auto Analytics — Purchases and Residual Valuations

Moderator: Richard Murphy, Federal Reserve Bank of Richmond

- **Conspicuous Consumption: Vehicle Purchases by the Credit Constrained**
Wenhua Di and **Yichen Su**, Federal Reserve Bank of Dallas
- **Current State of the Used Car Market: Inventory and Valuation**
Russ Walsh, Ally Bank



THURSDAY
JULY 15

Morning
sessions
open
(only) to
staff in
regulatory
agencies

Fourth Biennial
Conference on

AUTO
LENDING

9:00 a.m.–10:30 a.m.

Opening Remarks

William G. Spaniel

Senior Vice President and Lending Officer
Federal Reserve Bank of Philadelphia

- **Fireside Chat with Sunayna Tuteja**

Senior Vice President, Chief Innovation Officer, Federal Reserve System

Host: **Bill Spaniel**, Senior Vice President, Federal Reserve Bank of Philadelphia

Moderator: **Jason Keegan**, Federal Reserve Bank of Philadelphia

COVID-19 Impacts on Auto — Originations and Account Management

Moderator: **William Wisser**, Federal Reserve Bank of Philadelphia

- **COVID-19 and Auto Loan Origination Trends**

José J. Canals-Cerdá and **Brian Jonghwan Lee**, Federal Reserve Bank of Philadelphia

- **COVID-19 Impacts — Forbearance, Delinquency, and Credit Score Migration in Retail Auto Lending**

Martha Berube, Federal Reserve Bank of Chicago

Gerald Rama, Federal Reserve Bank of Philadelphia

10:30 a.m.–10:45 a.m.

Break

10:45 a.m.–12:15 p.m.

Auto Portfolio — Profitability, Reserves, and Funding — A New Look

Moderator: **Xudong An**, Federal Reserve Bank of Philadelphia

- **Debt Paydown on Auto Loans During the COVID-19 Pandemic**

Grace Bai and **Jason Keegan**, Federal Reserve Bank of Philadelphia

- **Auto Lending — ROA, Profitability, and Resiliency**

Anand Krishnan and **Bhanu Shri**, Federal Reserve Bank of Minneapolis

- **Auto Credit Linked Notes**

Jeremy Brizzi and **John Kelly**, Federal Reserve Bank of Philadelphia

12:15 p.m.

Final Thoughts for Regulators

Larry Cordell

Senior Vice President, Federal Reserve Bank of Philadelphia



THURSDAY
JULY 15

Afternoon
sessions
open to all

Fourth Biennial
Conference on

AUTO
LENDING

1:00 p.m.–2:30 p.m.

Credit Score Dynamics and Discrimination — Auto Consumers

Moderator: **Larry Santucci**, Federal Reserve Bank of Philadelphia

- **COVID-19 Credit Score Trends and New Model Developments**
Ethan Dornhelm, FICO
- **Racial Discrimination in the Auto Loan Market**
Alexander W. Butler and **James P. Weston**, Rice University,
and **Erik J. Mayer**, Southern Methodist University
- **Spillover Effects of the Opioid Epidemic in Auto Finance**
Mark Jansen, University of Utah

2:30 p.m.–2:45 p.m.

Break

2:45 p.m.–4:15 p.m.

Competition and Consumer Welfare — Subprime Auto Buyers

Moderator: **José Canals-Cerdá**, Federal Reserve Bank of Philadelphia

- **Competition and Selection in Credit Markets**
Anthony Lee Zhang and **Constantine Yannelis**,
University of Chicago
- **Auto Dealer Loan Intermediation: Consumer Behavior and Competitive Effects**
Jonathan A. Lanning, Federal Reserve Bank of Chicago;
David C. Low, Consumer Financial Protection Bureau;
Andreas Grunewald, Frankfurt School of Finance and
Management; and **Tobias Salz**, Massachusetts Institute
of Technology
- **Consumers' Declining Power in the Fintech Auto Loan Market**
Pamela Foohey, Yeshiva University

4:15 p.m.

Closing Remarks (Open Session)

Robert M. Hunt

Senior Vice President and Associate Director, Consumer Finance Institute, Federal Reserve Bank of Philadelphia



Xudong (Sean) An

Assistant Vice President

**Supervision, Regulation, and Credit Department
Federal Reserve Bank of Philadelphia**

Xudong (Sean) An is an assistant vice president in the Supervision, Regulation, and Credit Department at the Federal Reserve Bank of Philadelphia. He oversees the stress testing function and the retail supervision and research function. An's areas of research are mainly credit risk, consumer finance, and real estate. His research papers have appeared in academic journals such as the *Journal of Financial Economics*, the *Journal of Policy Analysis and Management*, and *Real Estate Economics*. He is on the editorial boards of *Real Estate Economics* and the *Journal of Real Estate Finance and Economics*. Prior to working at the Fed, he was a tenured professor of finance and taught at San Diego State University and the University of California, Los Angeles. He was also a consultant to Fannie Mae, the U.S. Treasury Department, and the U.S. Department of Housing and Urban Development. An has a Ph.D. from the University of Southern California and is an elected Fellow of the Weimer School of the Homer Hoyt Institute.



Grace Bai

Quantitative Specialist, RADAR Group

**Supervision, Regulation, and Credit Department
Federal Reserve Bank of Philadelphia**

Grace Bai is a quantitative specialist in the Risk Assessment, Data Analysis, and Research (RADAR) Group in the Supervision, Regulation, and Credit (SRC) Department at Federal Reserve Bank of Philadelphia. Currently, she is in the Auto Supervisory Modeling Team (SMT), which forecasts loss rates of auto loans for use in the Dodd-Frank Act Stress Tests (DFAST) and Comprehensive Capital Analysis and Review (CCAR) exercises. Before joining RADAR, Bai was with the SRC Safety and Soundness Group and worked on modeling bank and consumer risk. She has extensive knowledge of bank financial reporting, Y14, the Home Mortgage Disclosure Act, the Equifax consumer credit panel, and trade data. Before joining the Philadelphia Fed, Bai worked as a modeling specialist for multiple financial institutions including Bank of America and Ally Financials.

BIOGRAPHIES



Martha Berube

Supervision and Regulation Department
Federal Reserve Bank of Chicago

Martha Berube joined the Federal Reserve Bank of Chicago's Supervision and Regulation Department in July 2010. She spent 15 years in the financial services industry in various analytical, modeling, and credit risk management positions, including six years with the analytical department of a leading consumer credit bureau. Her Federal Reserve experience includes leading the Chicago Fed's Model Risk Oversight team, working in leadership positions in Federal Reserve System capital planning reviews, and serving as deputy central point of contact for a dedicated supervisory team. Berube has master's degree in economics from Northwestern University and a bachelor's degree in mathematics from the University of Montana. She is also a Chartered Financial Analyst (CFA) charterholder.



Jeremy Brizzi

Principal Capital Markets Specialist
Federal Reserve Bank of Philadelphia

Jeremy Brizzi is a principal capital markets specialist at the Federal Reserve Bank of Philadelphia. In his 11 years at the Fed, he has worked on a variety of System groups and committees focused on fixed income securities with a particular interest in market trends, stress testing, and risk-weighted assets. Prior to joining the Fed, Brizzi worked in a structured product division at Wells Fargo, working on domestic and international securitization asset classes. He has a B.S. in finance from the Pennsylvania State University and has a Chartered Financial Analyst (CFA) designation.



José J. Canals-Cerdá

Senior Special Advisor
Supervision, Regulation, and Credit Department
Federal Reserve Bank of Philadelphia

José J. Canals-Cerdá is a senior special advisor in the Supervision, Regulation, and Credit Department at the Federal Reserve Bank of Philadelphia. His current areas of expertise are financial risk management, financial econometrics, and consumer finance. He also publishes frequently in academic journals in those fields. He has been an advisor to the Large Institution Supervision Coordination Committee (LISCC) and is currently a member of the System Fintech Subgroup. Canals-Cerdá coleads the Supervisory Research and Policy Forum (SURF) at the Philadelphia Fed. He is a Ph.D. economist from the University of Virginia and a graduate of the Darden Executive Training Program; he has an undergraduate degree in mathematics with a concentration in statistics and decision sciences. He is also FRM-GARP [Financial Risk Manager - Global Association of Risk Professionals]-certified.



Larry Cordell

Senior Vice President, RADAR Group
Federal Reserve Bank of Philadelphia

Larry Cordell is senior vice president of the Risk Assessment, Data Analysis, and Research (RADAR) Group at the Federal Reserve Bank of Philadelphia. He previously was a special advisor in several Federal Reserve System initiatives during the financial crisis, including the examination team that evaluated the capital adequacy of Fannie Mae and Freddie Mac, the Supervisory Capital Assessment Program (SCAP), and the 2010–2021 Dodd–Frank Act Stress Tests (DFAST), overseeing the group starting in 2018. Cordell has also been an adjunct professor in the Pennsylvania State University’s Masters of Finance Program, teaching a course on Fixed Income Securities. Prior to coming to the Philadelphia Fed, he was chief economist at Radian Group. Prior to that, Cordell spent 11 years at Freddie Mac, where he was among the team of economists that developed Loan Prospector, the first commercially available automated underwriting scoring model for the U.S. mortgage market. He has published widely in areas of fixed income research, real estate economics, and banking and finance. Cordell has a Ph.D. in economics from the University of North Carolina at Chapel Hill and a B.A. from St. Louis University.



Ethan Dornhelm

Vice President
Scores and Predictive Analytics Unit
FICO

Ethan Dornhelm is a vice president in the Scores and Predictive Analytics Unit at FICO. He is currently responsible for the analytic development of FICO® Scores globally, as well as the research and development of new products and services within the Scores organization. Dornhelm has spent much of his 20 years at FICO supporting the technical redevelopment, maintenance, and analytic support of FICO® Scores in North America. He was one of the original analysts overseeing the development of the company’s consumer credit education portal myFICO.com. Prior to FICO, Dornhelm was a director in the credit risk management group at American Express. Focused on underwriting strategies in the consumer card business, he evaluated and used new data sources for consumers with limited credit history. He has a B.S. in management science/operations research from the University of California, San Diego.



Pamela Foohey

Professor of Law
Benjamin N. Cardozo School of Law
Yeshiva University

Pamela Foohey is a professor of law at Yeshiva University's Benjamin N. Cardozo School of Law. Her research centers on bankruptcy, business, commercial, and consumer law, primarily involving empirical studies of bankruptcy and related parts of the legal system. She is a coinvestigator on the Consumer Bankruptcy Project, a long-term research project studying persons who file bankruptcy. Foohey is the current chair of the Law and the Social Sciences' Section of the Association of American Law Schools and is a past chair of the Section on Commercial and Consumer Law and of the Section on Creditors' and Debtors' Rights. She is a cochair of the Law and Society Association's Household Finance Collaborative Research Network and is on the editorial advisory board of the *American Bankruptcy Law Journal*, a peer-reviewed academic journal published by the National Conference of Bankruptcy Judges. Prior to joining Cardozo Law, she was a professor of law at the Indiana University Mauer School of Law. She also clerked for the Honorable Thomas L. Ambro of the Third Circuit Court of Appeals, worked as an associate in the Bankruptcy and Financial Restructuring Group of Dorsey & Whitney LLP, and clerked for the Honorable Peter J. Walsh of the Bankruptcy Court for the District of Delaware. Foohey has a law degree (cum laude) from Harvard Law School and a B.S. (summa cum laude) from New York University's undergraduate Stern School of Business.



Robert (Bob) M. Hunt

Senior Vice President
Associate Director
Consumer Finance Institute
Federal Reserve Bank of Philadelphia

Robert (Bob) M. Hunt is senior vice president and associate director of the Bank's Consumer Finance Institute (CFI), which studies the credit and payment markets to understand how they affect consumers and the economy. His research within CFI focuses on gaps in our understanding of consumer credit and payments. By filling in those holes, Hunt's research — and that of his colleagues — can make important contributions to the literature and inform important policy decisions. Hunt conducts research on consumer payments, consumer finance, and the economics of innovation. His work includes studies of payment cards, adoption of new payment technologies, antitrust issues in consumer payment networks, identity theft, regulation of credit cards, mortgage default, consumer credit reporting, credit counseling organizations, and the collections industry. He has published papers covering economic geography and intellectual property.



Mark Jansen

Assistant Professor of Finance
University of Utah

Mark Jansen is an assistant professor of finance at the University of Utah. His primary research and teaching interests are in private equity, entrepreneurial finance, household finance, and corporate finance. He has working papers on private equity, mergers and acquisitions, and consumer finance. Prior to joining the University of Utah, Jansen worked in the private equity industry as managing director at Holland Park Capital and was responsible for finance, strategy, and investor relations. In this role, he was also a member of the Young President's Organization. Prior to this, he worked in management consulting and in the chemical industry. Jansen has a Ph.D. in finance from the University of Texas at Austin, an M.B.A. from the London Business School, and a dual B.S. in management science and mechanical engineering from the Massachusetts Institute of Technology.



Jason Keegan

Manager, Retail Supervisory Modeling Teams
Supervision, Regulation, and Credit Department
Federal Reserve Bank of Philadelphia

Jason Keegan is a manager of the Retail Supervisory Modeling Teams (SMTs) for the System-wide Dodd-Frank Act Stress Test (DFAST) in the Supervision, Regulation, and Credit Department at the Federal Reserve Bank of Philadelphia. His job responsibilities include serving as the colead for the Retail SMTs as part of the Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act Stress Tests (DFAST) exercises. Previously, he was an authorized officer at UBS Financial, where he was business manager for the chief administrative officer of Wealth Management Americas. Keegan has a Ph.D. and an M.A. in economics from Temple University and a B.S. in finance from the Pennsylvania State University.



Stephen Lake

Senior Complex Financial Institution Analyst
Federal Deposit Insurance Corporation

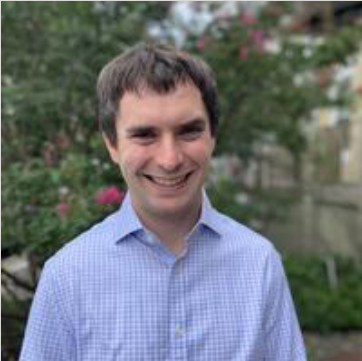
Stephen Lake is a senior complex financial institution analyst for the Federal Deposit Insurance Corporation's Division of Complex Institutions Supervision and Resolution, Risk Assessment Branch. He has over 36 years of regulatory experience assessing the risk of an array of financial products and services in regulated and nonregulated entities and developing appropriate supervisory policy as a senior specialty examiner, and retail credit and financial analyst. Lake's career focus has been in retail credit, and he has drafted several regulatory guidance papers detailing prudent practices. His responsibilities include reviewing horizontal risk for the systemically important financial institutions by performing in-depth analysis of specific markets, products, and practices pertaining to auto, credit card, and residential mortgage lending. Lake, a commissioned Bank Safety & Soundness Examiner, has a B.S. in business administration from the University of Maryland, College Park, with a major in accounting and a minor in finance.



Nick Laverty

Solution Associate Partner | Detroit
McKinsey & Company

Nick Laverty is a solution associate partner based in McKinsey & Company's Detroit office. He leads the McKinsey Center for Future Mobility (MCFM) Solution, where he drives thought leadership and client service on future mobility topics with a global team of 30 experts, product leaders, and technologists. Laverty has over a decade of automotive and mobility strategy experience at McKinsey and Ford Motor Company. Within the MCFM, he focuses on supporting strategic and operational transformations with players across the automotive/mobility value chain (automakers, suppliers, start-ups, infrastructure providers, investors), building integrated perspectives on potential future mobility scenarios to help players navigate uncertainty.



David C. Low

Economist
Consumer Financial Protection Bureau

David C. Low is an economist at the Consumer Financial Protection Bureau. His research uses both theory and evidence to study major issues in consumer finance, such as the effects of auto dealer loan intermediation and why mortgage borrowers default on their loans. He has a Ph.D. in economics from New York University.



Patrick Manzi

Chief Economist
National Automotive Dealers Association

Patrick Manzi is the National Automotive Dealers Association (NADA)'s chief economist. In this role, he works with both NADA as well as the American Truck Dealers (ATD), a division of NADA. Manzi regularly speaks to various audiences about the auto industry and is responsible for many of the association's monthly and annual economic reports, including *NADA Data* and *ATD Data*. He has a doctorate and an undergraduate degree in economics from West Virginia University.



Erik J. Mayer

Assistant Professor of Finance
Cox School of Business
Southern Methodist University

Erik J. Mayer is an assistant professor of finance at the Cox School of Business at Southern Methodist University. His research interests include financial institutions, household finance, and empirical corporate finance. His recent work studies racial disparities in households' access to credit and the role of credit access in intergenerational economic mobility. Mayer has a Ph.D. in finance and a bachelor's degree in mathematical economic analysis, both from Rice University.



Richard Murphy

Senior Bank Examiner
Federal Reserve Bank of Richmond

Richard (Rick) Murphy is a senior bank examiner with the Federal Reserve System at the Federal Reserve Bank of Richmond. He joined the Federal Reserve in October 2012. Murphy is currently responsible for monitoring retail credit risk at a large retail firm and is coleading the System-wide Large Institution Supervision Coordination Committee (LISCC) responsible for monitoring retail auto credit and strategy trends. Prior to joining the Federal Reserve, he was an executive vice president at the Bank of Hawaii. His responsibilities included retail credit and collection activities for the consumer and small business portfolios from 2006 to 2012. He also has 25 years of experience in various risk management roles at large banks and was the manager of *Retail Credit Review* for 14 years at NationsBank/Bank of America.



James D. Narron

First Vice President and Chief Operating Officer
Federal Reserve Bank of Philadelphia

James D. Narron joined the Federal Reserve Bank of Philadelphia in April 2016 as first vice president and chief operating officer. He was reappointed for his second five-year term effective March 1, 2021. Previously, Narron was a senior vice president and product manager at the Federal Reserve Bank of San Francisco, and senior vice president at the Federal Reserve Bank of New York. Before joining the New York Fed, Narron worked at the Federal Reserve Bank of Kansas City, the Board of Governors in Washington, D.C., and in consulting, primarily for foreign central banks. Narron and his coauthors published a series of 25 articles for the New York Fed's *Liberty Street Economics* blog that chronicle mostly forgotten financial crises over the 300 years from 1620 to 1920, just prior to the Great Depression, and explain why the lessons of the past are still relevant today. Narron is on the board of Ben Franklin Technology Partners of Southeastern Pennsylvania and the Sunday Breakfast Club. He previously was on the board of the Maura Clarke and Ita Ford Center in New York, as well as chair of the board of directors for the Keep A Breast Foundation. Narron has a master's degree in international business administration from the University of South Carolina and a bachelor's degree in finance and economics from Rockhurst University.



Gerald Rama

Senior Quantitative Analyst
Supervision, Regulation, and Credit Department
Federal Reserve Bank of Philadelphia

Gerald Rama, senior quantitative analyst, joined the Federal Reserve Bank of Philadelphia's Supervision, Regulation, and Credit Department in January 2017. His Federal Reserve experience includes developing, maintaining, and updating advanced consumer analytical tools for Federal Reserve System groups. He has also lent his data science expertise to multiple consumer finance research projects. Prior to joining the Federal Reserve, Rama spent more than seven years working on consumer finance at Large and Foreign Banking Organizations, working on credit risk, analytics, finance, accounting, portfolio management, underwriting, and ETL. He has a master's degree in quantitative finance and risk management from Temple University and a bachelor's degree in business administration from the University of Pittsburgh.



Chellappan Ramasamy

Assistant Vice President
Supervision, Regulation, and Credit Department
Federal Reserve Bank of Philadelphia

Chellappan Ramasamy is an assistant vice president in the Supervision, Regulation, and Credit Department at the Federal Reserve Bank of Philadelphia. He specializes in consumer and retail lending, focusing on auto, credit cards, and banking products, and is engaged in lead supervisory roles for the Federal Reserve System. Previously, Ramasamy was the lead for the Comprehensive Capital Analysis and Review (CCAR) Retail Supervisory Modeling Team for six years and was a lead for the auto portfolio's loss projections for the Dodd–Frank Act Stress Testing. Additionally, he has served in the Basel Qualification teams and participated in retail and wholesale examinations of other large and complex banking institutions for more than four years. Before joining the Fed, Ramasamy worked for Wells Fargo, JPMorgan Chase, and American Express. As a seasoned risk management expert, he has executed projects and managed teams engaged in modeling and analytics for acquisition, customer management, retention, collections, and loss forecasting functions. He has a Ph.D. and an M.S. in applied economics from the University of Minnesota and a B.S. in agricultural sciences/economics from Coimbatore, India.



Larry Santucci

Advisor and Research Fellow
Consumer Finance institute
Federal Reserve Bank of Philadelphia

Larry Santucci is an advisor and research fellow in the Consumer Finance institute at the Federal Reserve Bank of Philadelphia. Since joining the Bank in 2013, he has conducted research in consumer credit, the effects of aging on financial security, and historical racism in residential real estate markets. Currently, he is examining the effects of household foreclosure on children and their future credit usage. Santucci has a master's degree in economics from the Pennsylvania State University and a bachelor's degree in economics and business administration from Ursinus College.



Joelle Scally

Senior Data Strategist
Center for Microeconomic Data
Federal Reserve Bank of New York

Joelle Scally is a senior data strategist in the Center for Microeconomic Data at the Federal Reserve Bank of New York, focusing on the design and use of large and alternative data sets for research. She specializes in the use of credit bureau data for household finance research and plays a key role in the production of the *Quarterly Report on Household Debt and Credit*.



Suzanne Schatz

Quantitative Analyst III
Supervision, Regulation, and Credit Department
Federal Reserve Bank of Philadelphia

Suzanne Schatz is a quantitative analyst in the Supervision, Regulation, and Credit Department at the Federal Reserve Bank of Philadelphia. She is a subject matter expert for several large data sets hosted by the Risk Assessment, Data Analysis, and Research (RADAR) Data Warehouse and assists data users across the Federal Reserve System. Schatz has also worked on model-related projects with Supervision departments across the System. Prior to joining the Fed, she was an associate economist at Moody's Analytics, where she was involved in U.S. modeling and performed data-driven analyses of international and regional economies. She has a master's degree in international economics and finance, with specializations in data analytics and economic policy analysis, and a bachelor's degree in economics and English from Brandeis University.



Amin Shams

Assistant Professor of Finance
Fisher College of Business
Ohio State University

Amin Shams is an assistant professor of finance at the Fisher College of Business at Ohio State University. His primary research interests are empirical asset pricing with a focus on fintech, cryptocurrencies, and derivative markets. His works on market manipulation of the Volatility Index (VIX) derivatives and bitcoin prices have been published in top finance journals. He has other research projects on fintech, innovation in the lending market, and pricing of digital assets. His research has appeared in media outlets such as Bloomberg, the *Wall Street Journal*, the *New York Times*, *U.S. News*, Reuters, and the *Los Angeles Times*. Shams teaches fintech to undergraduate and graduate students at Fisher. He has a Ph.D. in finance from the University of Texas at Austin and an M.A. in global policy studies, specializing in international trade and finance, from the Lyndon B. Johnson School of Public Affairs.



Bhanu Shri

Quantitative Analyst
Supervision, Regulation, and Credit Division
Federal Reserve Bank of Minneapolis

Bhanu Shri is a quantitative analyst in the Supervision, Regulation, and Credit division of the Federal Reserve Bank of Minneapolis. Since joining the System Analytics and Support Group in December 2019, she has contributed to risk analytics and reporting for Large and Foreign Banking Organizations.



William (Bill) G. Spaniel

Senior Vice President and Lending Officer
Federal Reserve Bank of Philadelphia

William (Bill) G. Spaniel is senior vice president and lending officer at the Federal Reserve Bank of Philadelphia and oversees the Supervision, Regulation, and Credit Department. Although Spaniel started his career as a senior consultant for KPMG, his interest in regulatory compliance led him to a 25-year tenure with the Board of Governors of the Federal Reserve System. While there, Spaniel held many different roles and was able to serve on the Y2K planning and response committees and to coordinate the System's participation in the first International Monetary Fund Financial Sector Assessment Program review of the United States. Spaniel started his career in a community bank that placed a focus on outreach and support and has seen firsthand the difference that banks and bankers can make in both large and small communities. He is also interested in how financial institutions support growing and vibrant communities. Spaniel explores much of this interest in his department's community bank portfolio, which spans the Third District. Since joining the Bank in 2015, he has already implemented several cultural initiatives in the supervision function. He has a bachelor's degree in economics from the College of William and Mary.



Yichen Su

Research Department
Federal Reserve Bank of Dallas

Yichen Su joined the Research Department at the Federal Reserve Bank of Dallas in 2018. Su's current research focuses on urban economics, labor economics, and public economics. His doctoral dissertation investigates the determinants of the urban gentrification that has occurred over the last few decades. His other works have examined the impact of urban geography on gender wage gap and consumers' access to amenities. Su has a Ph.D. in economics from Stanford University and a B.A. in business economics (summa cum laude) from the University of California, Los Angeles.



Sunayna Tuteja

Chief Innovation Officer
Federal Reserve System

Sunayna Tuteja recently joined the Federal Reserve as the first chief innovation officer for the Federal Reserve System. She brings more than 10 years of global experience leading change and innovation at the nexus of finance, technology, and policy. Most recently, Tuteja was the global head of Emerging Tech & Strategic Partnerships at TD Ameritrade. This practice was inclusive of commercializing frontier tech, building and investing in the next generation of products and experiences in collaboration with partners in big tech, fintech, start-ups, and the VC ecosystem in North America and Asia.



Russ Walsh

Executive Director

Business and Process Optimization for Auto Finance

Ally Financial

Russ Walsh was appointed executive director of business and process optimization for Ally's auto business in 2019. In this role, he is responsible for remarketing operations and pricing, lease residual setting, contract processing, loss forecasting, and operations optimization. Previously, Walsh was the chief financial officer for Ally's dealer financial services unit and oversaw fiscal management of the company's \$115 billion assets from the auto finance and insurance operations. He joined the company's finance organization in 2009. Prior to joining Ally, he worked at Cerberus Operations and Advisory Company, consulting with Cerberus portfolio companies to improve financial processes and performance and helped evaluate acquisition targets. He started his finance career with GE Capital. Walsh has a bachelor's degree in economics and business from Lafayette College.



William Wisser

Vice President, Core Supervision

Supervision, Regulation, and Credit Department

Federal Reserve Bank of Philadelphia

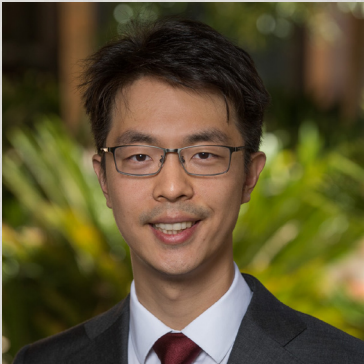
As a vice president in the Supervision, Regulation, and Credit Department at the Federal Reserve Bank of Philadelphia, William Wisser is responsible for the examination process within the Third District, as well as overseeing the mergers and acquisitions, enforcement, and surveillance units. He leads a group of examiners who assess the financial condition and risk management practices at the state member banks and holding companies in the Philadelphia Fed's Third District. His team also assesses the financial condition and risk management practices for savings and loan holding companies located in the Second District. Analysts in the mergers and acquisition unit review and approve applications for mergers, change of control, and other applications dictated by the Board of Governors. Under Wisser's leadership, analysts in the enforcement unit author and issue enforcement actions against supervised banks and holding companies that either are in financial trouble or have failed to comply with sound risk management practices. The surveillance unit monitors conditions within the region and monitors supervised banks and holding companies from an offsite perspective. He joined the Bank in 1998 after working as a financial-institutions examiner with the Commonwealth of Pennsylvania Department of Banking. He has a bachelor's degree in business administration from Bloomsburg University.



Melinda Zabritski

Senior Director
Financial Solutions Team
Experian Automotive

Melinda Zabritski is senior director for Experian Automotive’s financial solutions team. Throughout her career with Experian, Zabritski has overseen the product strategy for Experian Automotive’s lending channel and creation of the automotive credit vertical. After over 18 years in product management, she transitioned into sales and consulting. She also is Experian’s primary analyst and spokesperson regarding key automotive finance trends. Prior to joining Experian in 2004, Zabritski spent eight years in various product management and analyst positions within the credit industry, including management and development of credit risk models and market trending tools. She has an M.B.A. from the University of Phoenix and a B.S. in political science and urban government from Louisiana State University.



Anthony Lee Zhang

Assistant Professor of Finance
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Anthony Lee Zhang is an assistant professor of finance at the University of Chicago Booth School of Business. His research covers topics including financial derivatives, housing markets, and the allocation of natural resources, such as land and electromagnetic spectrum. Zhang has received a number of honors and awards, including the 2019 AQR Top Finance Graduate Award and the 2018 Facebook Fellowship. He has a Ph.D. in economic analysis and policy from the Stanford Graduate School of Business and a B.A. in economics from the University of Chicago, where he received the Becker Friedman Institute Award for Academic Achievement in Microeconomics.