European Central Bank DGR - Financial Research Division

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## **RESEARCH FIELDS**

Financial economics, with a focus on financial intermediation, insurance, corporate finance, and financial stability

## PROFESSIONAL EXPERIENCE

| 2022 – present | European Central Bank, Financial Research Division Senior Economist  |
|----------------|--|
| 2018 – 2022    | University of Bonn, Department of Economics, Institute of Finance and Statistics, <i>Postdoctoral Researcher</i>                             |
| 2015 – 2018    | Goethe University Frankfurt, Department of Finance,<br>International Center for Insurance Regulation, <i>Research and Teaching Assistant</i> |

## **EDUCATION**

| 2018 – 2022 | Postdoctoral researcher in Financial Economics University of Bonn (Prof. Farzad Saidi, Institute of Finance and Statistics)                                  |
|-------------|--|
| 2015 – 2018 | Dr. rer. pol. (Ph.D.) in Finance and Economics, <i>summa cum laude</i> <b>Goethe University Frankfurt</b> (Chair Prof. Helmut Gründl, Department of Finance) |
| 2013 – 2015 | Master of Science in Mathematics, with honors  Goethe University Frankfurt  Heriot-Watt University Edinburgh, Exchange Student, Spring 2015                  |
| 2010 – 2013 | Bachelor of Science in Mathematics with Economics Friedrich Schiller University Jena   |

## RESEARCH VISITS AND FELLOWSHIPS

| 2020 – 2022    | ECONtribute Reinhard Selten Institute Associated Member  |
|----------------|--|
| 2019 – 2022    | European Central Bank & European Systemic Risk Board  External Researcher, Alberto Giovannini Programme for Data Science |
| 2018 – present | International Center for Insurance Regulation, Goethe University Frankfurt<br>Research Fellow                            |
| 2018           | St. John's University New York Visiting Ph.D. Student and W. R. Berkley Fellow   |
| 2017           | Isenberg School of Management, UMASS Amherst Visiting Ph.D. Student  |

#### **PUBLICATION**

Constrained efficient equilibria in selection markets with continuous types, with Irina Gemmo and Casey Rothschild

#### Journal of Public Economics (2020)

We prove the existence of the constrained efficient Miyazaki (1977)–Wilson (1977)–Spence (1978) equilibrium in competitive markets with adverse selection when the distribution of unobservable types is continuous. Our existence proof applies under extremely general assumptions about individual preferences. When we restrict preferences to have the widely-used-in-the-selection-markets-literature quasilinear form, we characterize the properties of this equilibrium by developing a simple and computationally efficient numerical method for constructing it. Applying this method, we show in a natural setting how one would compute the equilibrium allocation, potentially facilitating empirical work using the MWS equilibrium. We illustrate this empirical application in the context of policy interventions and show that the welfare implications of a coverage mandate critically hinge on whether the market implements a constrained efficient allocation like the MWS equilibrium or a constrained inefficient allocation like in Azevedo and Gottlieb (2017).

## **WORKING PAPERS**

#### Investor-Driven Corporate Finance: Evidence from Insurance Markets, single-authored

This paper documents that the bond investments of insurance companies transmit shocks from insurance markets to the real economy. Liquidity windfalls from household insurance purchases increase insurers' demand for corporate bonds. Exploiting the fact that insurers persistently invest in a small subset of firms for identification, I show that these increases in bond demand raise bond prices and lower firms' funding costs. In response, firms issue more bonds, especially when their bond underwriters are well connected with investors. Firms use the proceeds to raise investment rather than equity payouts. The results emphasize the significant impact of investor demand on firms' financing and investment activities.

Policy impact: Presentation at EIOPA's Financial Stability Seminar (2021)

Tackling the Volatility Paradox: Spillover Persistence and Systemic Risk, single-authored

#### **R&R Journal of Financial and Quantitative Analysis**

This paper introduces Spillover Persistence as a novel characteristic of systemic risk, which reflects the dynamics of losses in the financial system. Declines in Spillover Persistence capture buildups of fragility before systemic risk materializes, both during the run-up phase of banking crises and asset price bubbles. Consistent with the volatility paradox in macro-finance models, loose financial constraints connect declines in Spillover Persistence to fragility. When systemic risk materializes and amplification effects arise, Spillover Persistence increases. Thus, it disentangles fragility from amplification effects, which is useful to implement countercyclical regulation and extends existing systemic risk measures.

Loss Sharing in Central Clearinghouses: Winners and Losers, with Loriana Pelizzon and Mila Getmansky Sherman

#### **R&R** Review of Asset Pricing Studies

Central clearing counterparties (CCPs) were created to reduce default losses in derivatives markets. We show that not all market participants benefit, and some are worse off. Loss sharing rules and their interaction with market network structure affect who wins or loses. We develop a simple model which shows that currently implemented rules largely benefit market participants with flat portfolios but not participants with directional portfolios or those located in the periphery of the network, consistent with their reluctance to voluntarily clear in practice. We then investigate how alternative loss sharing rules can offset cross-sectional differences in clearing benefits.

#### Life Insurance Convexity, with Nicolaus Grochola and Helmut Gründl

Life insurers massively sell savings contracts with surrender options which allow policyholders to withdraw a guaranteed amount before maturity. These options move toward the money when interest rates rise. Using data on German life insurers, we estimate that a 1 percentage point increase in interest rates raises surrender rates by 17 basis points. We quantify the resulting liquidity risk in a calibrated model of surrender decisions and insurance cash flows. Simulations predict that surrender options can force insurers to sell up to 3% of their assets, depressing asset prices by 90 basis points. The effect is amplified by the duration of insurers' investments, and its impact on the term structure of interest rates depends on life insurers' investment strategy.

#### Policy impact:

- Featured in EIOPA's Financial Stability Report (2020), ESRB's "Enhancing the macroprudential dimension of Solvency II" (2020), Deutsche Bundesbank's Financial Stability Review (2018)
- Presentations at ECB (2020), EIOPA's Financial Stability Seminar (2018), Deutsche Bundesbank (2018)

#### Financial Literacy and Precautionary Insurance, with Annette Hofmann and Petra Steinorth

We study insurance markets with individuals that have limited financial literacy. In our model, complexity of insurance contracts causes individuals to be uncertain about insurance payouts. As a result, a trade-off between second-order (risk aversion) and third-order (prudence) risk preferences drives insurance demand. Very prudent individuals desire more insurance coverage when contract complexity increases, while the effect is reversed for less prudent individuals. We characterize the competitive market equilibrium with complex contracts when firms can exert costly effort to reduce complexity. Based on the equilibrium analysis, we propose a monetary measure for the welfare cost of financial illiteracy and show that it is mainly driven by risk aversion. We conclude with a discussion about implications for policy interventions and consumer protection.

#### **WORK IN PROGRESS**

A Theory of Margins and Central Clearing, with Martin Oehmke

Climate Change and Financial Stability, with Dominik Damast and Simon Rother

## PRESENTATIONS (including invited, \* by co-author)

| 2023 | AEA (ARIA session)  |
|------|---|
| 2022 | AEA (poster), Copenhagen Business School, Erasmus University Rotterdam, ESCP Business School, European Central Bank, Frankfurt School of Finance and Management, Norwegian School of Economics, University of Amsterdam, University of Mannheim, University of Naples Federico II, Utrecht University School of Economics   |
| 2021 | AEA (ARIA session), SGF, Eastern Finance Association, American Risk and Insurance Association, European Group of Risk and Insurance Economists*, German Insurance Science Association, European Insurance and Occupational Pensions Authority, Goethe University Frankfurt, Hebrew University of Jerusalem  |
| 2020 | AFA, IWH-FIN-FIRE Workshop on <i>Challenges to Financial Stability</i> , CEBRA, Paris December Finance Meeting, European Central Bank, University of Oxford*  |
| 2019 | Risk Theory Society, EEA, Finance Theory Group Summer School, EARIE, German Insurance Science Association, SIAM Financial Mathematics and Engineering*, Conference on the Regulation and Operation of Modern Financial Markets*, Wellesley College  |
| 2018 | AEA (poster), American Risk and Insurance Association, European Group of Risk and Insurance Economists, German Insurance Science Association*, University of Bonn Workshop in Financial Economics, ECB Money Market Workshop, Bundesbank-CFS-ECB Workshop on Macro and Finance, SAFE Annual Conference, Deutsche Bundesbank, St. John's University New York, Goethe University Frankfurt, Isenberg School of Management UMASS Amherst, European Insurance and Occupational Pensions Authority |
| 2017 | AFA (poster), American Risk and Insurance Association*, European Group of Risk and Insurance Economists, International Actuarial Association Colloquium, German Insurance Science Association*, MIT Sloan, Deutsche Bundesbank, Isenberg School of Management UMASS Amherst, University of Leeds, University of Guelph, St. John's University New York, Goethe University Frankfurt   |
| 2016 | SGF, German Finance Association, American Risk and Insurance Association, European Group of Risk and Insurance Economists, S.S. Huebner Foundation Doctoral Colloquium, German Insurance Science Association, University of Jena, Goethe University Frankfurt   |
| 2015 | World Risk and Insurance Economics Congress   |

## **HONORS AND GRANTS**

| 2021             | ECONtribute Selten Seeding Grant (EUR 1 500)   |
|------------------|--|
| 2020 - 2022      | University of Bonn Argelander Grant (EUR 25 000)                                       |
| 2019, 2020       | ECONtribute Travel Grants  |
| 2019             | Frankfurt Prize for Insurance Economics  |
| 2019             | Ernst Meyer Prize of the Geneva Association  |
| 2019             | German Academic Exchange Service (DAAD) Travel Grant                                   |
| 2017, 2018, 2019 | German Insurance Science Association (DVfVW) Travel Grants                             |
| 2017             | AFA Ph.D. Student Travel Grant   |
| 2017             | Final round for SCOR/EGRIE Young Economist Best Paper Award                            |
| 2016             | S.S. Huebner Foundation Doctoral Fellow  |
| 2011 – 2015      | German National Academic Foundation (Studienstiftung des deutschen Volkes) Scholarship |

# TEACHING EXPERIENCE

| University of Bonn |   |
|--------------------|---|
| 2020 - 2021        | Instructor for Banking and Securitization (Master level, lecture)               |
| 2019 – 2021        | Instructor for Financial Economics of Insurance (Bachelor level, seminar)       |
| 2019               | Instructor for Derivatives Markets and Central Clearing (Master level, seminar) |
| 2018               | Instructor for Corporate Finance (Master level, lecture)                        |
| 2018 - 2021        | Co-supervision of Bachelor's and Master's theses                                |
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## Goethe University Frankfurt

| 2018        | TA and Instructor for <i>The Micro- and Macroeconomic Role of Insurance Companies</i> (Master level, lecture) |
|-------------|---|
| 2017        | TA for Insurance Economics (Bachelor level, lecture)  |
| 2016        | TA for Risk Management and Insurance (Bachelor level, lecture)  |
| 2016        | TA for Insurance and Regulation (Bachelor level, lecture)   |
| 2015        | TA for Insurance Technologies (Master level, seminar)   |
| 2015 - 2018 | Co-supervision of Bachelor's and Master's theses  |
| 2014 - 2015 | Tutor for Statistics I and II (Department of Mathematics)   |

## PROFESSIONAL ACTIVITIES

| Refereeing              | Journal of Banking and Finance (5x), Journal of Risk and Insurance (2x), Games and Economic Behavior (2x), Geneva Risk and Insurance Review (2x), Insurance: Mathematics and Economics, Deutsche Bundesbank discussion paper series, Journal of Credit Risk, Journal of Insurance Issues |
|-------------------------|--|
| Discussions             | Northern Finance Association (2021), Eastern Finance Association (2021), German Insurance Science Association (2021, 2019), European Group of Risk and Insurance Economists (2018, 2017, 2016), American Risk and Insurance Association (2018, 2016), SGF (2016)                         |
| Program committee       | Midwest Finance Association (2023), Eastern Finance Association (2022), German Economic Association (2022, 2020)   |
| Conference organization | Frankfurt Insurance Research Workshop (2018, 2017), ICIR Workshop on Systemic Risk in the Insurance Industry (2016)  |

# DEPARTMENTAL SERVICE

| 2020        | Member of the recruiting committee, University of Bonn      |
|-------------|---|
| 2019 – 2021 | Co-Organizer of Finance seminar series, University of Bonn  |
| 2019 – 2021 | Co-Organizer of Law&Econ seminar series, University of Bonn |

# MISCELLANEOUS

Citizenship German

Languages German (native), English (fluent), Spanish (rusty)

Interests Classical Piano, Jazz Saxophone, Running