

HYEYOON JUNG

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EMPLOYMENT

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| Federal Reserve Bank of New York <i>Capital Markets, Research Group (2025- Current)</i> <i>Financial Intermediation, Research Group (2021- 2025)</i> | Jul 2021 – Current Economist |
| J.P. Morgan (S.E.A) Limited <i>FX & Rates Trading, Currency & Emerging Markets</i> | Jul 2012 – Jul 2015 Associate (FX Trader) |

EDUCATION

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| Leonard N. Stern School of Business, New York University, New York, NY Ph.D. in Finance <i>Dissertation: Essays on International Finance and Financial Stability</i> | 2021 |
| M.Phil in Finance | 2019 |
| University of Pennsylvania, Philadelphia, PA <i>Jerome Fisher Program in Management and Technology</i> The Wharton School , Bachelor of Science in Economics, <i>Magna Cum Laude</i> The School of Engineering and Applied Science , Bachelor of Applied Science, <i>Magna Cum Laude</i> | 2012 |

RESEARCH INTERESTS

Asset Pricing, Financial Intermediation, Risk Management, International Finance

WORKING PAPERS

Physical Climate Risk Factors and an Application to Measuring Insurers' Climate Risk Exposure (with Robert Engle, Shan Ge, and Xuran Zeng)

Revise and Resubmit at Review of Financial Studies (RFS)

We construct a novel physical risk factor using a portfolio of REITs, long on those with properties highly exposed to climate risk and short on those with less exposure. Combined with a transition risk factor, we

assess U.S. insurers' climate risk through operations and \$13 trillion in asset holdings. Estimating dynamic climate betas, we find higher sensitivity to physical risk among insurers operating in riskier states and to transition risk among those holding more brown assets. Using these betas, we calculate capital shortfalls under climate stress scenarios, offering insights into insurers' resilience to climate risks.

U.S. Banks' Exposures to Climate Transition Risks (with Joao Santos and Lee Seltzer)

We propose a novel approach to estimate banks' credit exposures to transition risks using sectoral effects of climate policies from general equilibrium (GE) models. At worst, estimated exposures reach 14% of bank loan portfolio values. Average exposures drop below 2% after incorporating information on loan payoff structures. Emissions only explain 60% of the variation in our estimated exposure measure, suggesting that our measure captures aspects of transition risk unique to GE models. Consistent with managing their exposures to transition risk, banks joining the Net-Zero Alliance reduced their exposures compared to other banks, mainly by decreasing lending to the riskiest industries.

Credit Card Banking (with Itamar Drechsler, Weiyu Peng, Dominik Supera, and Guanyu Zhou)

Credit card interest rates, the marginal cost of consumption for nearly half of households, currently average 23%, far exceeding the rates on any other major type of loan or bond. Why are these rates so high? To understand this, and the economics of credit card banking more generally, we analyze regulatory account-level data on 330 million monthly accounts, representing 90% of the US credit card market. Default rates are relatively high at around 5%, but explain only a fraction of cards' rates. Non-interest expenses and rewards payments are more than offset by interchange and non-interest income. Operating expenses, such as marketing, are very large, and are used to generate pricing power. Deducting them, we find that credit card lending still earns a 6.8% return on assets (ROA), more than four times the banking sector's ROA. Using the cross section of accounts by FICO score, we estimate that credit card rates price in a 5.3% default risk premium, which we show is comparable to the one in high-yield bonds. Adjusting for this, we estimate that card lending still earns a 1.17% to 1.44% "alpha" relative to the overall banking sector.

Deviations from the Law of One Price across Economies (with Jaehoon Kyle Jung)

In a model with agents facing constraints heterogeneous across economies, we provide a novel explanation for an understudied yet economically significant deviation from the Law of One Price across FX forward markets. Specifically, we document a substantial divergence between the exchange rate for locally traded forward contracts and contracts with the same maturity traded outside the jurisdiction of countries during the global financial crisis, and that the magnitudes varied across currencies. The model predicts that (1) the basis increases with the shadow costs of constraints across time and increases with the country-specific FX position limit across countries; (2) the shadow cost of each constraint non-linearly increases as the intermediary sector's relative performance declines below a threshold; and (3) higher shadow cost of the position limit predicts lower future excess return on local-currency

denominated assets, as buying local assets relaxes the FX position limit constraint imposed on the intermediaries. We test the model predictions and find consistent evidence in the countries with tight position limits.

PUBLICATIONS AND FORTHCOMING PAPERS

Real Consequences of Shocks to Intermediaries Supplying Corporate Hedging Instruments

(Job Market Paper)

Review of Financial Studies (RFS), Volume 38, Issue 1, January 2025, Pages 39–113

I show that shocks to financial intermediaries that supply hedging instruments to corporations have real effects. I exploit a quasi-natural experiment in South Korea in 2010, where regulations required banks to hold enough capital for taking positions in foreign exchange derivatives (FXD). Using the variation in exposure to this regulation across banks, I find that the regulation caused a reduction in the supply of FXD, leading to a significant decline in exports for firms that held derivatives contracts with more exposed banks. These results indicate the crucial role of intermediaries in allocating risks through the provision of derivatives and establish a causal relationship between financial hedging and real economic outcomes.

CRISK: Measuring the Climate Risk Exposure of the Financial System (with Robert Engle and Richard Berner)

Journal of Financial Economics (JFE)

We develop a market-based methodology to assess banks' resilience to climate-related risks and study the climate-related risk exposure of large global banks. We introduce a new measure, CRISK, which is the expected capital shortfall of a bank in a climate stress scenario. To estimate CRISK, we construct climate risk factors and dynamically measure banks' stock return sensitivity (that is, climate beta) to the climate risk factor. We validate the climate risk factor empirically and the climate beta estimates by using granular data on large U.S. banks' loan portfolios. The measure is useful in quantifying banks' climate-related risk exposure through the market risk and the credit risk channels.

Climate Stress Testing (with Viral Acharya, Richard Berner, Robert Engle, Johannes Stroebe, Xuran Zeng, and Yihao Zhao)

Annual Review of Financial Economics 2023 15:1, 291-326

We explore the design of climate stress tests to assess and manage macro-prudential risks from climate change in the financial sector. We review the climate stress scenarios currently employed by regulators, highlighting the need to (i) consider many transition risks as dynamic policy choices; (ii) better understand and incorporate feedback loops between climate change and the economy; and (iii) further explore "compound risk" scenarios in which climate risks co-occur with other risks. We discuss how the

process of mapping climate stress scenarios into financial firm outcomes can incorporate existing evidence on the effects of various climate-related risks on credit and market outcomes. We argue that more research is required to (i) identify channels through which plausible scenarios can lead to meaningful short-run impact on credit risks given typical bank loan maturities; (ii) incorporate bank-lending responses to climate risks; (iii) assess the adequacy of climate risk pricing in financial markets; and (iv) better understand and incorporate the process of expectations formation around the realizations of climate risks. Finally, we discuss the relative advantages and disadvantages of using market-based climate stress tests that can be conducted using publicly available data to complement existing stress testing frameworks.

PRESENTATIONS (Including scheduled; Own presentations only)

Seminars: University of Napoli, Korea University- Korea Advanced Institute of Science and Technology Finance Seminar 2025

Conferences: Society for Financial Studies Cavalcade, Financial Intermediation Research Society Conference

Seminars: Columbia University, Federal Reserve Bank of New York, E-axes Young Scholar Series on Financial Economics and Sustainability, Financial Stability Oversight Council Meeting 2024

Conferences: American Economic Association Meeting, ASSA Meeting (International Banking, Economics, and Finance Association Session), Midwest Finance Association Meeting, CESifo Conference on Energy and Climate Economics, ZEW Conference on Ageing and Sustainability Finance, Western Economic Association International Meeting (International Banking, Economics, and Finance Association Session), Banca d'Italia and IMF Conference on Embedding Sustainability in Credit Risk Assessment, Yale Initiative on Sustainable Finance Conference, Stanford Institute for Theoretical Economics (SITE) Conference, WE_ARE_IN Macroeconomics and Finance Conference, University of Napoli Climate Finance Workshop, University of Oklahoma and Review of Financial Studies Climate and Energy Finance Research Conference

Seminars: Financial Stability Oversight Council Meetings (Banking Group, Markets Group, Scenario Analysis Group), Federal Reserve Cross-bank Climate Risk Community, Indian Institute of Management Ahmedabad, Central Bank of Brazil, International Monetary Fund, European Central Bank, Federal Reserve Board, Federal Reserve Bank of New York 2023

Conferences: American Economic Association Meeting, System Climate Meeting by the Federal Reserve Bank of San Francisco, Annual Conference of the Central Bank of Chile, Stanford Institute for Theoretical Economics (SITE)

Conference, Women Assistant Professors of Finance (WAPFIN) Conference at NYU Stern, Federal Housing Finance Agency (FHFA) Econ Summit, System Banking Conference by the Federal Reserve Board, Financial Stability Conference by the Federal Reserve Bank of Cleveland and the Office of Financial Research

Seminars: Federal Reserve Cross-bank Climate Risk Community, Board of Governor's CREST Seminar, ESSEC-Amundi Chair Webinar, Bank of Korea, Federal Reserve Bank of Richmond 2022

Conferences: NBER International Finance and Macroeconomics Program Meeting, Australasian Finance and Banking Conference, Paris December Finance Meeting, UN PRI Academic Network Conference, OFR Climate Implications for Financial Stability Conference, Cornell University ESG Investing Research Conference, International Journal of Central Banking Research Conference, European Finance Association Meeting, Central Bank Research Association Annual Meeting, Banco de Portugal Conference on Financial Intermediation, OCC Symposium on Climate Risk in Banking & Finance, IMF Macro-Financial Research Conference, System Climate Meeting by the Federal Reserve Bank of San Francisco, NY Fed- Columbia Conference on Environmental Economics and Policy, HEC Paris - CEPR Conference, Banque de France Workshop, Eastern Finance Association Meeting, University of Oklahoma and Review of Financial Studies Climate and Energy Finance Research Conference, European Systemic Risk Board Workshop, Western Economic Association International Meeting (International Banking, Economics, and Finance Association Session)

Seminars: European Central Bank, Central Bank of Chile, Korea University, Hong Kong University of Science and Technology, Vanderbilt Owen, Yale SOM, Federal Reserve Bank of New York, Federal Reserve Board, Stockholm School of Economics, Federal Reserve Bank of Chicago, Warwick Business School, U of SC Darla Moore, Oxford Said, Imperial College London, University of Hong Kong 2021

Conferences: European Conferences of the Economics Community (EC²) Conference, MIT GCFP Conference, Australasian Finance and Banking Conference, IFABS Oxford Conference, International Risk Management Conference, Federal Reserve Stress Testing Conference, Volatility and Risk Institute Conference

Seminars: Society for Financial Econometrics Seminar, NYU Stern, Columbia GSB (Ph.D.) 2020

Conferences: AFA Ph.D. Poster Session, Federal Reserve Board Pre-Job Market Conference

ACADEMIC AND PROFESSIONAL SERVICES

Discussions:

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| Society of Financial Studies Cavalcade | 2025 |
| American Finance Association Meeting | 2025 |
| American Economic Association Meeting | 2024 |
| International Roles of the U.S. Dollar Conference, Women in System Economic Research Conference, 2023 ECB-NY Fed Workshop | 2023 |
| Eastern Finance Association Meeting, Southern Economic Association Meeting, Paris December Meeting | 2022 |
| Australasian Finance and Banking Conference | 2021 |

Refereeing:

Applied Economics Letters, Climate Policy, Ecological Economics, Journal of Banking & Finance, Journal of Corporate Finance, Journal of Economic Surveys, Journal of Finance, Journal of Financial Economics, Journal of International Financial Markets Institutions & Money, Journal of Risk and Insurance, Nature Climate Change, Quarterly Journal of Economics, Review of Finance, Review of Financial Studies

Program Committee:

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| Financial Management Association Meeting | 2025 |
| WE ARE IN Macroeconomics and Finance Conference | 2025 |
| University of Napoli Parthenope Conference on Sustainable Banking and Finance | 2025 |
| International Finance and Banking Society Conference | 2024 |
| International Roles of the U.S. Dollar Conference | 2024 |

Session Chair:

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| Paris December Meeting (Banking/ Financial Intermediation Session) | 2022 |
| EC ² Conference (Macroeconomics of Emissions, Climate Finance Session) | 2021 |
| IFABS Oxford Conference (Climate Change Session) | 2021 |

Professional Service:

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| Research Analyst Coordinator | 2025-Current |
| Research Analyst and Intern Recruiting Coordinator (Received Vault Award for Excellence) | 2023-2024 |
| Financial Intermediation Seminar Organizer | 2022-2023 |

Pre-doctoral Advising:

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| Aaron Chen (Placement: Chicago Booth) | 2025 |
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HONORS AND AWARDS

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| Financial News & KAFA Top-Journal Paper Award | 2024 |
| Berkeley Haas Sustainability Research Prize Finalist | 2023 |
| Research Grant, National Science Foundation Project "Market Based Climate Stress Tests" (Award # 2218455) | 2022 |
| Research Grant, Inter-American Development Bank and Volatility and Risk Institute, NYU Stern | 2021 |
| Ph.D. Research Grant, Center for Global Economy and Business, NYU Stern | 2020 |
| AFA Ph.D. Student Travel Grant | 2020 |
| Jules Bogen Fellowship, NYU Stern | 2019 – 2020 |
| NYU Stern Doctoral Fellowship | 2015 – 2021 |
| NYU Stern Teaching Commendation | 2018 |
| Wharton Undergraduate Research Award | 2012 |

TEACHING EXPERIENCE

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| Instructor, Foundations of Finance (Undergraduate) | Summer 2018 |
| Overall Evaluation: 5.0/5.0 <i>Awarded Commendation for Teaching Excellence</i> | |
| Teaching Fellow, Financial Econometrics (Ph.D.) Prof. Robert Engle | Spring 2018 |
| Teaching Fellow, Volatility (MBA) Prof. Robert Engle | January 2020 |
| Teaching Fellow, Investments (Executive MBA) Prof. Anthony Lynch | Fall 2019 |
| Teaching Fellow, Foundations of Finance (MBA) Prof. Anthony Lynch | Summer 2017 – 2019 |
| Teaching Fellow, Principles of Securities Trading (Undergraduate) Prof. Joel Hasbrouck | Spring & Fall 2017- 2018, 2020 |
| Project Advisor, Stern Signature Project (MBA) Prof. Robert Engle | Spring 2021 |

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| Guest Speaker, Climate Finance, NYU Stern, Prof. Johannes Stroebe | Fall 2021 |
| Guest Speaker, Credit Risk and Bankruptcy, NYU Stern, Prof. Viral Acharya | Spring 2022 |
| Guest Speaker, Credit Risk and Bankruptcy, NYU Stern, Prof. Viral Acharya | Spring 2023 |
| Guest Speaker, Credit Risk, NYU Stern, Prof. Viral Acharya | Spring 2023 |
| Guest Speaker, Climate Finance, NYU Stern, Prof. Johannes Stroebe | Fall 2023 |
| Guest Speaker, Climate Finance, Cornell Johnson, Prof. Alissa Kleinnijenhuis | Spring 2024 |
| Guest Speaker, Climate Finance, Stockholm School of Economics, Prof. Ye Zhang | Fall 2024 |

REFERENCES

Prof. Robert Engle (Co-chair)

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Prof. Philipp Schnabl (Co-chair)

New York University, Stern School of Business
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Prof. Joel Hasbrouck

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Prof. Ralph Koijen

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Prof. Alexi Savov

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