International Business School Suzhou at XJTLU
西浦国际商学院

2025 XJTLU Derivatives and FinTech Workshop

Programme

Hosts

International Business School Suzhou, Xi'an Jiaotong-Liverpool University

Support

Jiangsu Province Distinguished Professor Talent Programme

& Research Centre of Excellence (Emerging Tech and Innovation)

May 17, 2025

Suzhou, China

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VENUE

BS Building-BS4114

International Business School Suzhou (IBSS)

Xi'an Jiaotong-Liverpool University

NO. 8 Chongwen Rd, SIP, Suzhou 215123, China

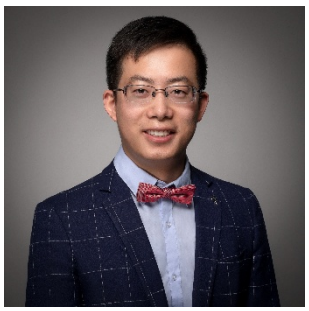
LUNCH AND DINNER VENUE

- Tea Breaks: IBSS Floor 4 (4F)
- Lunch: East Dining Hall

UNIVERSITY MAP

ORGANISERS

Dr. Xinfeng Ruan



Xinfeng (Edwin) Ruan is a Senior Associate Professor of Finance and Distinguished Professor of Jiangsu Province (江苏省特聘教授) at the International Business School Suzhou (IBSS) of Xian-Jiaotong-Liverpool University (XJTLU). Edwin's research interests mainly focus on asset pricing and derivatives, both in theoretical and empirical domains. He has extensive research experience in these areas and has published more than 30 papers in highly regarded, peer-reviewed journals, such as the *Journal of Financial Markets*, *Journal of Economic Dynamics and Control*, and *Journal of Futures Markets*. Prior to joining XJTLU, he worked at the University of Otago from 2019 to 2023 and was a Postdoctoral Research Fellow at the Auckland University of Technology from 2018 to 2019.

Dr. Jia Zhai

Jia Zhai holds the position of Senior Associate Professor in Finance at the International Business School Suzhou at XJTLU. Her primary areas of research revolve around financial technology and applied financial econometrics, including but not limited to machine learning in finance, option pricing, sentiment analysis, and volatility forecasting. She has made numerous contributions to top-tier international journals, with her work featured in the *European Journal of Operational Research, Decision Support System*, *Quantitative Finance*, *International Review of Financial Analysis*, *British Accounting Review*, and the *European Journal of Finance*. She has reviewed for several peer-reviewed journals, such as the *British Accounting Review*, *the International Journal of Finance and Economics*, *Expert Systems with Applications*, among others. Her research outputs have been showcased at globally renowned conferences, including INFORMS, EURO, Asia FA, and EFMA. In recent years, Jia has secured competitive grants funded by various bodies, including the NSFC Young Scientist project, NSSFC, Education Bureau China, and ESRC UK.

SPEAKERS

Dr. Bei Chen

Bei Chen holds a Ph.D. in Finance from the University of Sydney. She is serving as an Assistant Professor at the School of International Business and Administration, Shanghai International Studies University. Her research focuses on asset pricing, where she has published high-quality papers in leading journals such as the *Journal of Financial and Quantitative Analysis* and the *Journal of Banking and Finance*.

Dr. Guanglian Hu

Guanglian Hu is the Deputy Head of Discipline (Research) and a Senior Lecturer in Finance at the University of Sydney Business School. His research focuses on asset pricing and derivatives. Topics include determinants of expected option returns, variance risk premium, VIX derivatives, consumption-based asset pricing, and return predictability. He has published his research in leading academic journals such as the Journal of Financial and Quantitative Analysis and the Review of Asset Pricing Studies. Before joining the University of Sydney, Hu worked as a Visiting Assistant Professor of Finance at ITAM and Pacific Lutheran University, where he taught courses in the undergraduate and graduate programmes. He received his B.S. in Economics from Xiamen University in 2009, his M.A. in Economics from the University of California at Santa Barbara in 2010 and his Ph.D. in Finance from the University of Houston in 2017.

Dr. Dun Jia

Dun Jia, Assistant Professor at the Peking University HSBC Business School. His research interests lie in macroeconomics, monetary policy, asset pricing, and the Chinese financial market. His current research focuses on the micro-foundation of quantitative macroeconomic models, and on the applications of market structure and incomplete information in understanding monetary policy transmission, central bank communication, and asset pricing. His work has been

published in international journals such as the *American Economic Review*, *Review of Finance*, *Journal of Economic Dynamics and Control*, as well as Chinese journals including the *Journal of Financial Research* and *Journal of World Economy*. He has led and participated in several projects funded by the National Natural Science Foundation of China and the Ministry of Education's Humanities and Social Sciences Fund. He has been advising the State Council, National Development Bank and Agricultural Development Bank of China in various projects.

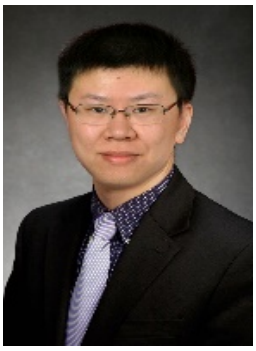
Prof. Yanchu Liu

Yanchu Liu is currently Professor of Finance and Associate Dean of Lingnan College, Sun Yat-sen University, Guangzhou, China. He obtained PhD in Financial Engineering in Chinese University of Hong Kong (Shatin, Hong Kong), as well as Bachelor and MSc in Statistics in University of Science and Technology of China. His primary research interests include quantitative finance and digital finance with applications. He has published research papers in leading academic journals such as *Operations Research*, *INFORMS Journal on Computing*, *Quantitative Finance*, *Journal of Futures Markets*, *Journal of Economic Dynamics and Control*, *European Journal of Operational Research*, etc.

Prof. Dan Luo

Dan Luo is a Professor of Finance at the School of Finance, SUFE. His research interests include asset pricing theory and empirics and corporate finance. His work was published in the *Mathematics of Operations Research* (x1) and *Management Science* (x2). He won best awards at FMA and several other international conferences. He was recipient of outstanding reviewer of 2016 by Emerald. He was the Principal Investigator of National Natural Science Foundation of China, for both young scholar and general programs. He founded the FAiNance Lab in 2024.

Dr. Ti Zhou



Ti Zhou is an Associate Professor of School of Economics and Management, Harbin Institute of Technology (Shenzhen). His research interests include asset pricing, options-implied information, portfolio choice, and big data analysis in finance. He has published papers in *Journal of Financial and Quantitative Analysis*, *Journal of Empirical Finance*, and Chinese journals such as *Journal of Management Sciences in China* and *Systems Engineering Theory & Practice*. From 2009 to 2011, worked as quantitative research associate at the Guotai Junan Securities.

Dr. Xiaoyang Zhuo

Xiaoyang Zhuo is currently an Assistant Professor at the School of Economics, Beijing Institute of Technology, Beijing, China. Zhuo obtained her B.A., M.A., and Ph.D. degrees from the Business School, Nankai University, Tianjin, China. She also served as a post-doctoral researcher at the PBC School of Finance, Tsinghua University, and as a visiting scholar at the University of Illinois at Urbana-Champaign, the University of Liverpool, and the University of Massachusetts, Amherst. Her research interests encompass areas such as option pricing, option return and risk, term structure models, and credit risk. Her research work has been published in academic journals including the *Journal of Finance*, *Journal of Real Estate Finance and Economics*, *Quantitative Finance*, *Computational Economics*, and others.

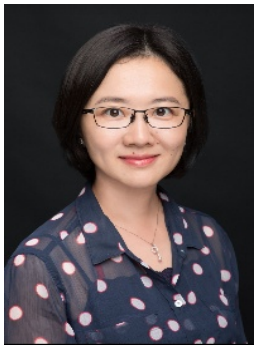
DISCUSSANTS

Dr. Zhuo Chen

Zhuo Chen is an Associate Professor at PBC School of Finance, Tsinghua University and the director of China Finance Case Center, Tsinghua University. His research interests include Chinese bond markets and shadow banking, empirical asset pricing, and financial econometrics. His papers have been published in academic journals including *The Journal of Finance,*

Review of Financial Studies, Journal of Financial Economics, Management Science, Review of Finance, and others. His research has won several academic awards, including The Journal of Finance Dimensional Fund Advisors Prizes for Distinguished Paper Award, Outstanding Scientific Research Young Scholar Award (Humanities and Social Sciences) of the MOE of PRC, Liu Shibai Economics Award, Nominee of Masahiko Aoki Award for Economics Paper, the SFS Cavalcade Arthur Warga Award for the Best Paper in Fixed Income, the China Financial Research Conference Best Paper Award, the PwC 3535 Finance Forum Best Paper Award, the International Conference on Asia-Pacific Financial Markets Best Paper Award, the Second Prize in Chicago Quantitative Alliance (CQA) Academic Competition, and PanAgora Crowell Memorial Prize Finalist.

Prof. Xiaoquan Liu



Xiaoquan Liu is a Professor of Finance at the University of Nottingham Ningbo China. Her research interests include derivatives, asset pricing, and applied financial econometrics. Professor Liu's research appears in the *Journal of Banking and Finance*, *Journal of Empirical Finance*, *Journal of Economic Behavior & Organization*, *Journal of Economic Dynamics & Control*, among others.

Prof. Qunzi Zhang

Qunzi Zhang is a Professor of Finance at Shandong University's School of Economics, honored as a National Excellent Young Scientist (NSFC) and a provincial leading talent in finance. Her research has been published in international journals, including the *Journal of Financial Economics*, *Management Science*, *Journal of Financial and Quantitative Analysis*, and *Journal of Money, Credit and Banking*. She holds editorial roles as an Associate Editor for *Financial Research Quarterly*, *Journal of Futures Markets*, and the *International Journal of Finance and Economics*, and serves on the editorial boards of the *Energy Nexus*, *Finance Research Open*, and *The Innovation*.

Dr. Xun Lei

Xun Lei obtained his PhD in finance from University of Leicester in 2018. He joined International Business School Suzhou at XJTLU in 2021. Previously he worked as Lecturer in Banking Finance at University of Northampton from 2018 to 2020 with extensive teaching experience in International Finance, Corporate Finance and Portfolio Management. Xun also had rich industry experience in the Chinese market. He worked as Macro Analyst at CIB Research from 2020 to 2021. Xun's primary research interests revolve around asset pricing and investment strategies. More specifically, he is interested in whether asset prices reflect available information efficiently or merely follow the behavioural tendencies of traders. More recently, he concentrated his research efforts on examining the interplay between financial markets and political development, as well as the impact of policy uncertainties. His other research interests include asset pricing, investor sentiment, and green finance.

Dr. Yuanyi Zhang

Yuanyi Zhang obtained her Ph.D. in Finance from Louisiana State University, with research interests in options, asset pricing, and machine learning. She earned her master's degree in finance from the Central University of Finance and Economics and her bachelor's degree in financial engineering from Southwestern University of Finance and Economics. Her research includes studies on retail traders' behavior in options, spillover effects in option pricing, and the information conveyed from the options market to the stock market.

2025 XJTLU Derivatives and FinTech Workshop

Finance and RCE2, IBSS, XJTLU

Date: 17 May (Saturday) 2025

Venue: BS4114, South Campus, XJTLU

8:30-8:55	**Registration**	
8:55-9:00	**Opening**	**Lixian Qian** Professor of Marketing and Innovation Associate Dean for Research, IBSS, XJTLU
9:00-11:50	**Morning**	
	Chair:	**Edwin Ruan**, IBSS, XJTLU
9:00-9:35	Title:	***The Term Structure of Index Option Returns***
	Presenter:	**Guanglian Hu**, University of Sydney Business School, University of Sydney
9:35-9:45	Discussant:	**Yuanyi Zhang**, IBSS, XJTLU
9:45-9:50	Q&A	
9:50-10:25	Title:	***Testing the CAPM in Equity Options: Earnings Announcements as Catalysts for Market Efficiency***
	Presenter:	**Bei Chen**, School of Business and Management, Shanghai International Studies University
10:25-10:35	Discussant:	**Guanglian Hu**, University of Sydney Business School, University of Sydney
10:35-10:40	Q&A	
10:40-11:00	Tea break	
11:00 - 11:35	Title:	***Multiverse Equivalent Expectation Measures for Computing Moments of Contingent Claim Returns***
	Presenter:	**Xiaoyang Zhuo**, School of Economics, Beijing Institute of Technology
11:35-11:45	Discussant:	**Yanchu Liu**, Lingnan (University) College, Sun Yat-sen University
11:45-11:50	Q&A	
11:50-13:00	Lunch Break	East Dining Hall
13:00-	**Afternoon session**	

	Chair:	**Jia Zhai**, IBSS, XJTLU
13:00-13:35	Title:	***Learning, Price Discovery, and Macroeconomic Announcements***
	Presenter:	**Dun Jia**, HSBC Business School, Peking University
13:35-13:45	Discussant:	**Xun Lei**, IBSS, XJTLU
13:45-13:50	Q&A	
13:50-14:25	Title:	***Information Content of Call-Put Implied Volatility Spreads: Evidence from China's Options Market***
	Presenter:	**Ti Zhou**, Faculty of Economics and Management, Harbin Institute of Technology (Shenzhen)
14:25-14:35	Discussant:	**Xiaoquan Liu**, Nottingham University Business School China, University of Nottingham Ningbo China
14:35-14:40	Q&A	
14:40-15:10	Tea break	
15:10-15:45	Title:	***Belief Dispersion in the Market for Event Risk***
	Presenter:	**Dan Luo**, School of Finance, Shanghai University of Finance and Economics
15:45-15:55	Discussant:	**Zhuo Chen**, PBC School of Finance, Tsinghua University
15:55-16:00	Q&A	
16:00-16:35	Title:	***Large Language Models and Futures Price Factors in China***
	Presenter:	**Yanchu Liu**, Lingnan (University) College, Sun Yat-sen University
16:35-16:45	Discussant:	**Qunzi Zhang**, School of Economics, Shandong University
16:45-16:50	Q&A	
16:50-16:55	Closing remark:	**Xuezhong (Tony) He** Professor of Finance IBSS, XJTLU

Abstracts

The Term Structure of Index Option Returns

Presented by **Guanglian Hu**

We study the term structure of index option returns by comparing realized option returns with their expected returns implied from option pricing models. We find that while the diffusive volatility risk premium can match 1-month index option returns well, it cannot fit the returns of long maturity options. The volatility jump risk premium shares the similar drawback in fitting the term structure of index option returns, though to a lesser extent. The jump risk premium is sufficient to explain the patterns in realized index option returns, but its success critically depends on a specification in which the variance of price jumps is priced. Finally, we present novel results on higher moments of option returns and also characterize the dynamics in the conditional expected index option returns.

Testing the CAPM in Equity Options: Earnings Announcements as Catalysts for Market Efficiency

Presented by **Bei Chen**

We test the performance of the capital asset pricing model (CAPM) in pricing equity options. We find a strong and positive relation between option beta and option returns during earnings announcement days (EADs), which becomes insignificant on non-announcement days. This option return premium around EADs can be fully explained by option beta. The beta-sorted return spread exhibits strong pre-announcement drift and does not reverse after the announcement. We show that increased investor attention and end-user option demand demands amplify systematic risk pricing. Unlike equities, option returns are driven by systematic risk, not idiosyncratic volatility or mispricing. CAPM's effectiveness depends on public information and investor engagement.

Multiverse Equivalent Expectation Measures for Computing Moments of Contingent Claim Returns

Presented by **Xiaoyang Zhuo**

This paper introduces Multiverse Equivalent Expectation Measures (MEEMs) for deriving analytical solutions to the variance, covariance, and higher-order moments and co-moments of contingent claim returns over a finite horizon. We show that the solutions for the M^{th}-order moment or co-moments require constructing a MEEM within an expanded probability product space of M identical marginal probability spaces, representing M-1 parallel universes in addition to the original universe. The state variables evolve identically across all universes up to the horizon date but diverge independently thereafter. Using different classes of MEEMs, we offer a comprehensive analytical framework for deriving analytical solutions of higher-order moments and co-moments of returns on financial derivatives and fixed income securities. This unified framework significantly broadens the application of econometric methods to asset pricing and portfolio management for contingent claims.

Learning, Price Discovery, and Macroeconomic Announcements

Presented by **Dun Jia**

This paper examines how news released overnight can effectively move the stock prices after market reopens. Using macroeconomic news released outside regular Chinese stock market hours, we analyze how investors' overnight learning, in the absence of trading, affects price discovery. Our findings show that overnight learning helps level the information playing field among heterogeneous investors, leading to more efficient price discovery and reduced information asymmetry at market opening. Retail investors benefit particularly from this process, evidenced by increased trading activity, higher trading profit, and reduced return reversals during the trading day compared to overnight returns.

Information Content of Call-Put Implied Volatility Spreads: Evidence from China's Options Market

Presented by **Ti Zhou**

We examine the information content of the call-put implied volatility spread (IVS) of Shanghai Stock Exchange 50 ETF options. Empirically, the IVS significantly and negatively predicts future 50 ETF returns at both weekly and monthly horizons. This predictability is robust both in-sample and out-of-sample, which stands in contrast to existing evidence from the U.S. options market. We explore

several potential explanations and show that the IVS is closely linked to the option-cash basis. Its predictability is consistent with the model of Hazelkorn, Moskowitz, and Vasudevan (2023), where the IVS reflects liquidity demand common to both options and underlying equity markets.

Belief Dispersion in the Market for Event Risk

Presented by **Dan Luo**

We present a dynamic equilibrium model in which a continuum of investors holds heterogeneous beliefs about the likelihood of rare events. We derive closed-form solutions for belief weights, stock and option prices, the event-risk insurance premium, and the open interest of the event-risk insurance market. Belief dispersion amplifies the impact of rare events in cash-flow news, leading to a larger jump size in the stock price and self-exciting jump risk in option pricing. The amplification of jump frequency creates a wedge between the actual jumps in the stock price, which remain homogeneous and unpredictable, and their market pricing. Our model generates additional empirical regularities including option-implied volatility smirks and countercyclical equity premium. Furthermore, we find an inverted U-shaped relationship between belief dispersion and the size of the event-risk insurance market. In an otherwise identical two-investor economy with heterogeneous beliefs, belief dispersion and its amplification effects disappear in extreme economic states.

Large Language Models and Futures Price Factors in China

Presented by **Yanchu Liu**

We leverage the capacity of large language models such as Generative Pre-trained Transformer (GPT) in constructing factor models for Chinese futures markets. We successfully obtain 40 factors to design single-factor and multi-factor portfolios through long-short and long-only strategies, conducting back-tests during the in-sample period. Comprehensive empirical analysis reveals that GPT-generated factors deliver remarkable Sharpe ratios and annualized returns while maintaining acceptable maximum draw-downs. Moreover, these factors demonstrate significant performance across extensive robustness tests, particularly excelling after the cutoff date of GPT's training data.