

Jiyuan Huang

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EDUCATION

University of Zurich, Ph.D. candidate, Department of Banking and Finance	2017 - 2023
Tilburg University, MSc in Econometrics	2016 - 2017
Renmin University of China, B.A. in Mathematics and B.A. in Finance	2012 - 2016

RESEARCH FIELDS

Financial Intermediation, Applied Econometrics, Behavioral Corporate Finance, Machine Learning

WORKING PAPERS

Difference-in-Differences with Economic Factors and the Case of Housing Returns

Coauthored with Per Östberg

This paper studies how to incorporate observable factors in difference-in-differences and document their empirical relevance. We show that even under random assignment directly adding factors with unit-specific loadings into the difference-in-differences estimation results in biased estimates. This bias, which we term the “bad time control problem” arises when the treatment effect covaries with the factor variation. Applied researchers partially control for the factor structure by using: (i) unit time trends, (ii) pre-treatment covariates interacted with a time trend and (iii) group-time dummies. We show that all these methods suffer from the bad time control problem and/or omitted factor bias. We propose two solutions to the bad time control problem. To evaluate the relevance of the factor structure we study US housing returns. Adding macroeconomic factors shows that factors have additional explanatory power and estimated factor loadings differ systematically across geographic areas. This results in substantially altered treatment effects.

Memory and Analyst Forecasts: A Machine Learning Approach

Coauthored with Zhongtian Chen

This paper applies a machine learning memory model to empirically study analysts' belief formation processes. We employ an effective memory model that successfully reproduces fundamental principles of the human memory system. We use analyst forecasts to train the model and extract analysts' mental contexts and recalls when making forecasts. We find that analysts' recalls display a strong recency effect, but long-term memories are more salient in some periods such as the COVID pandemic, consistent with the evidence that the analysts' mental context and memory significantly alter during the crisis. Then we train a separate model as a machine learning benchmark by replicating realized earnings. Compared with the benchmark, analysts' recalls react insufficiently to external changes and their mental contexts have distinct focuses. The comparison further indicates that analysts' recall distortion from the benchmark can explain analysts' forecast errors. By blocking the forget channel, we demonstrate that analysts and the benchmark selectively forget different past experiences and the differences can contribute to explaining the recall distortion. These empirical results address the importance of memory mechanisms in modeling financial agents' belief formation processes.

Can ChatGPT Reduce Human Financial Analysts' Overoptimistic Bias?

Coauthored with Xiaoyang Li, Haoming Feng, Hailong Yang

This paper examines the potential of ChatGPT, a large language model, as a financial advisor for listed firm performance forecasts. We focus on the constituent stocks of the CSI 300 Index and compare ChatGPT's forecasts for major financial performance measures with human analyst forecasts and realized values. Our findings suggest that ChatGPT has the potential to correct the optimistic bias of humans. This study contributes to the literature by exploring the potential of ChatGPT as a financial advisor and demonstrating its role in reducing human biases in financial decision making.

RESEARCH IN PROGRESS

Should We Cluster Standard Errors on Firms?

This paper evaluates the reliability of firm-level clustered standard errors in difference-in-difference analyses within empirical corporate finance. I find that residuals in these studies often exhibit cross-sectional correlation, leading to the underestimation of standard errors. By employing placebo interventions, I explore the empirical significance of this underestimation. The results indicate that more than 30% of samples would be erroneously rejected under the null hypothesis at a 5% significance level. Two-way clustered standard errors don't adequately address the cross-sectional correlation because dependent error terms within clusters make the estimation asymptotically invalid. Alternative estimation methods also fail to achieve desirable rejection rates. I recommend using bootstrapped standard errors to achieve accurate standard errors and rejection rates. Furthermore, business similarity primarily drives the cross-sectional correlation. As a result, standard errors that consider spatial correlation perform well in various settings.

TEACHING EXPERIENCE

Teaching assistant for Advanced Corporate Finance (<i>master level course</i>)	2022
Guest lecturer for Empirical Corporate Finance (<i>Ph.D. level course</i>) <i>Overall evaluation: 5.9/6</i>	2022
Teaching assistant for Empirical Corporate Finance (<i>Ph.D. level course</i>)	2018 - 2022
Master thesis supervision	2018 - 2023

SEMINAR AND CONFERENCE PRESENTATIONS

SFI Research Days, Gerzensee; Brown Bag Seminar, University of Zurich; KOF-ETH- UZH International Economic Policy Seminar, ETH Zurich	2022
Brown Bag Seminar, University of Zurich	2021
IFABS 2018, Porto Business School	2018

SCHOLARS AND AWARDS

Ph.D. Scholarship, University of Zurich	2017 - 2022
Bachelor Scholarship, Renmin University of China	2015
Google Code Jam Programming Contest <i>World Ranking top 2% in 2014; top 4% in 2021, 2019, 2018, 2015, 2013</i>	2013 - 2021
Microsoft "Beauty of Programming" National Challenge Contests <i>National Top 60</i>	2013
National Olympiad in Informatics, China <i>Silver Medal</i>	2011

HOBBIES

Programming, Cooking, Travel