Haiyue (Harry) Yu

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EDUCATION

Princeton University **Princeton, NJ**
Ph.D. Candidate, Econometrics and Quantitative Economics *09/2017 –*
M.A. Economics

- GPA: **3.92**. Coursework: Asset Pricing, Machine Learning, Advanced Macroeconomic Theory, Econometric Theory,etc.
- General Exams Passed: Finance, Macroeconomics
- Research Interests: Empirical Asset Pricing, OTC markets, Financial Econometrics

University of Hong Kong **Hong Kong**
Bachelor in Economics with minor in Mathematics, Faculty of Business and Economics *09/2013 – 06/2017*

- Cumulative GPA: **3.86,** with highest honors
- Coursework: Statistical Inference, Numerical Analysis, Optimization, Probability Theory etc.
- Honors: Dean's Honor List, Philip K.H. Wong Foundation Scholarship, Lee Shau Kee Scholarship

Northwestern University **Evanston, IL**
Exchange Student *01/2016 – 08/2016*

- Coursework: Real Analysis, Macroeconomics (Graduate), Microeconomics (Graduate)

RESEARCH PROJECTS

Secondary Market Friction and Investor Composition with Jian Li
Short term investors such as mutual funds enter into corporate bond market as risk free rate declines. Short (long) term investors sort into risky (safe) and short (long) term bonds. Firms with more short-term investors have higher offering yield, issue more short-term bonds. Investor composition explains the credit spread puzzle, corporate bonds with more short- term investors would have a higher spread. We then propose a model to explain the above effect, featuring the role of investor composition on secondary market friction.

Reaching for Yield under Low Interest Rate
We document the reaching for yield behavior of US insurance companies after 2008. Under low interest rate environment, Life insurance companies reach for yields by increasing bonds' time to maturity to hedge the duration risk since their liability has longer time to maturity than their assets. Property and Casualty (PC) insurance companies have shorter liability than assets, they reach for yield by taking more credit risks. Such risk-taking behavior is common across most PC insurance companies and cannot be explained by new entry, change of ownership or change of market structure.

Co-Jump Asymmetry with Qi Lin

- Presented at **Vienna Copenhagen Conference on Financial Econometrics (2017), 10th International Conference on Computational and Financial Econometrics (2016)**

The co-jumps between individual assets and market index are asymmetric. We provide the estimators for downside jump beta and upside jump beta and derive their asymptotic distributions. The difference between downside jump beta and upside jump beta is statistically significant. We propose a measure for co-jumps asymmetry (CJA) and find that stocks with higher CJA (more left-skewed co-jumps) outperform their counterpart by a monthly return of 0.48%. The predictability is stronger for stocks with small idiosyncratic volatility, large market capitalization and high liquidity, implying the relationship between CJA and cross-sectional stock returns is driven by risk-return trade off rather than the behavioral bias of investors.

Option Pricing with Generalized Autoregressive Score (GAS) Models with Qi Lin

- Presented at **Vienna Copenhagen Conference on Financial Econometrics (2017)**

We apply Generalized Autoregressive Score (GAS) models proposed by Creal, Koopman, and Lucas (2013) to option pricing. The model is first estimated under physical measure, and then transformed to risk neutral measure by Esscher transform. The simulation studies show that the GAS class model can generate realistic implied volatility surfaces. We provide empirical evidence that our model could outperform classical GARCH class models in terms of option pricing.

RESEARCH EXPERIENCE

Location as an Asset **Princeton, NJ**
Research Assistant, advised by Professor Esteban Rossi-Hansberg, Princeton University *06/2018 – 08/2018*

- Write Matlab code to solve the portfolio choice problem and general equilibrium results for the model.

Housing Booms and Busts, Labor Market Opportunities, and College Attendance **Evanston, IL**
Research Assistant, advised by Professor Matthew Notowidigdo, Northwestern University *06/2016 – 08/2016*

- Identify multiple structural breaks for metropolitan level housing markets, build metropolitan level data set for employment structure, conduct regression analysis and event study for the effect of housing booms on employment.

OTHER EXPERIENCE

Preceptor **Princeton, NJ**

- *Financial Risk Management (ECO491/FIN591)* *Fall 2019*
- *Behavioral Finance (ECO468/FIN568)* *Spring 2020*

SKILLS

MATLAB, Stata, Python

I am interested in Artificial Intelligences' impact on finance. The first part is how AI techniques would affect the price efficiency on the financial market. With more hedge funds adopt the AI techniques to conduct trading, how would this in general affect the market efficiency and stability.

On the other hand, AI technology has changed the consumer banking industry. On the one hand, this would improve bank's monitoring ability. On the other hand, this would give bank more information and bargaining power over the consumers, which may increase the monopoly power of the bank and hurt consumer welfare.

Moreover, I'd like to have the opportunity to have a better understanding of AI. How should we think about it from a model's perspective, how would the introduction of AI differ from previous technology advance? I am confused with those questions for a while and I hope I could solve part of the puzzle from this workshop.