YANG LIU

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EDUCATION

Tsinghua University, China *Sep. 2015 ~ Jun. 2021 (Expected)*
Ph.D. in Finance
School of Economics and Management
Dissertation: Factor Model and Machine Learning
Advisor: Prof. Yingzi Zhu

Washington University in St. Louis, the US *Feb. 2019 ~ Jan. 2020*
Visiting Student
Olin Business School
Advisor: Prof. Guofu Zhou

Central University of Finance and Economics, China *Sep. 2011 ~ Jun. 2015*
B.A. in Financial Engineering (graduate with honor)
School of Finance

INTERESTS

Empirical Asset Pricing, Machine Learning, Investment Management

WORKING PAPERS

Trend Factor in China: The Role of Large Individual Trading, (Under review) with Guofu Zhou (WashU) and Yingzi Zhu from (TsinghuaU)
Best Paper Award in 2020 FMA Annual Meeting (Semi-finalist), Best Paper Award in 2020 THU-PKU-RUC EMDS
Available at: https://ssrn.com/abstract=3402038
Presented at: seminars at Gothenburg University, Lund University, Southwestern University of Finance and Economics, Stockholm University, Tsinghua University, University of Cincinnati, UIUC, and Washington University in St. Louis; 2018 CFRIC, 2018 IAFDS, 2019 CICF, 2019 WRADSP, 2019 NZFM, 2019 AFBC, 2020 THU-PKU-RUC EMDS, 2020 FMA, 2021 AFA Ph.D. Poster (scheduled).

We propose a 4-factor model for the Chinese stock market by adding a trend factor into the market, size, and value of Liu, Stambaugh, and Yuan's (2019) 3-factor model. Because of up to 80% of individual trading, the trend factor captures salient relevant price and volume trends, and earns a monthly Sharpe ratio of 0.48, much greater than that of the market (0.11), size (0.20), and value (0.28). The 4-factor model explains well a number of stylized facts and anomalies of the Chinese stock market. It also explains well mutual fund returns, serving as an analogue of Carhart's (1997) model in China.

Maximizing the Sharpe Ratio: A Genetic Programming Approach, with Guofu Zhou (WashU) and Yingzi Zhu (TsinghuaU)
Available at: https://ssrn.com/abstract=3726609
Presented at: seminars in London Business School, Sichuan University, Tsinghua University, Washington University in St. Louis, and Zhejiang University; 2018 IAFDS, 2019 CFPDS, 2019 CFRIC, 2020 China FinTech Conference.

While common machine learning algorithms focus on minimizing the mean-square errors of model fit, we show that genetic programming, GP, is well-suited to maximize an economic objective, the Sharpe ratio of the usual spread portfolio in the cross-section of expected stock returns. In contrast to popular regression-based learning tools and the neural network, GP can double their performance in the US, and outperform them internationally. We find that, while the economic objective plays a role, GP captures nonlinearity in comparison with methods like Lasso, and it requires smaller sample than neural network.

WORKING PAPERS

Return Asymmetry and the Cross-section of Stock Returns: Theory and Evidence, with Yingzi Zhu (TsinghuaU)

We extend the CAPM to incorporate the return asymmetry in the cross-section of stock returns. We motivate our asymmetry measure based on a general return distribution beyond normal distribution and derive the risk premium due to asymmetry. Empirically, our asymmetry measure negatively predicts the expected cross-sectional returns. The further decomposition shows that the idiosyncratic asymmetry dominates the systematic asymmetry in stocks with greater individual investor participation, although on average, the systematic asymmetry dominates. Our asymmetry measure also helps to explain the MAX effect and its performance is robust to various control variables and alternative constructions.

WORK IN PROGRESS

Market Closure and Short-Term Reversal, with Pasquale Della Corte (Imperial College London), Robert Kosowski (Imperial College London) and Tianyu Wang (TsinghuaU)

A strategy that buys securities with low past overnight returns and sells securities with high past overnight returns generates sizeable out-of-sample excess returns and Sharpe ratios. This strategy -- labelled as overnight-intraday reversal strategy -- outperforms the conventional short-term reversal strategy for major international equity markets and futures written on equity indices, interest rates, commodities, and currencies. Consistent with time-varying limits to arbitrage we find that cross-sectional return volatility explains the returns from this strategy.

Technical Analysis in the Stock Market: A Review, with Yufeng Han (UNCC), Guofu Zhou (WashU), and Yingzi Zhu (TsinghuaU)

Technical analysis is the study for forecasting prices via past data. In this survey, we examine not only the time-series predictive power of technical indicators on the aggregated stock market and various portfolios, but also the cross-sectional predictability of stocks whose long-short portfolios earn substantial abnormal returns. We focus on reviewing and updating some of the major academic research on traditional technical analysis methods, but also discuss briefly some of the recent machine learning approaches such as Lasso, neural network and genetic programming.

Choosing Factors: Explanatory Power vs Model Parsimony

We examine which factor collection, in the model space spanned by existing factors, performs best in terms of the balance between explanatory power and model parsimony. Taking the union of the factors in the recent notable models, our comparison of 512 models shows that Liu, Zhou, and Zhu's (2020) four factor model achieves the greatest explanatory power measured by the Sharpe ratio among all those satisfying model parsimony condition. Moreover, this model exhibits greater ability in explaining various test assets, and it also earns persistent premium.

CONFERENCES

AFA, American Finance Association Annual Meeeting, Ph.D. Poster (scheduled)	2021
FMA, Financial Management Association Annual Conference	2020
EFA, Eastern Finance Association Annual Conference	2020
China FinTech Conference in Qingdao*	2020
THU-PKU-RUC Economic and Management Doctoral Symposium	2020
CICF, China International Conference in Finance	2016/2019
WARSP, WRDS Advanced Scholar Program Conference	2019
NZFM, New Zealand Finance Meeting	2019
AFBC, Australasian Finance and Banking Conference	2019
CFPDS, Conference on Financial Predictability and Data Science*	2019
CFRIC, China Finance Review International Conference	2018/2019
IAFDS, International Accounting and Finance Doctoral Symposium	2018
AsianFA, Asian Financial Association conference*	2016
RFM, Risk Management Conference*	2016
Annual Conference on Advances in the Analysis of Hedge Fund Strategies*	2015
Intl. Symposium on Financial System Engineering and Risk Management	2014

SEMINARS	Gothenburg University*, London Business School*, Lund University*, Sichuan University*, Southwestern University of Finance and Economics*, Stockholm University*, Tsinghua University, University of Cincinnati*, University of Illinois at Urbaba-Champaign*, University of Oxford*, Washington University in St. Louis, Zhejiang University* (* Co-author presented)	
AWARDS AND SCHOLARSHIP	Best Paper Award in 50th FMA Annual Conference (Semi-finalist)	2020
	Best Paper Award in THU-PKU-RUC Doctoral Symposium	2020
	THU Visiting Scholarship for Ph.D. students	2019
	SEM Visiting Scholarship for Ph.D. students	2019
	Best Discussant in International Accounting and Finance Doctoral Symposium	2018
	Outstanding Graduate in Beijing	2015
	Scholarship for Comprehensive Development	2014
	China National Scholarship	2012
TEACHING	TA for *Financial Investment Practice* (Master) by Prof. Tianyu Wang	2020
	TA for *Investment* (Master, in English) by Prof. Tianyu Wang	2020
	TA for *Academic Essay Training* (Undergraduate) by Prof. Tianyu Wang	2020
	TA for *Investment* (Undergraduate) by Prof. Yingzi Zhu	2018/2020
	TA for *Financial Engineering* (Undergraduate) by Prof. Yingzi Zhu	2016~2018
	TA for *Financial Engineering* (MOOC) By Prof. Yingzi Zhu	2016~2017
INTERN	Research Department. CITIC Securities Co., Ltd, Beijing, China Project on Multi-factor Model in the Chinese A-share	Jul.2014 ~Dec.2014
SKILLS	Programming: Python, Matlab, R, SAS, Stata, C, SQL, LaTeX Language: Mandarin (native), English (fluent)	

REFERENCES

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