

# Peixuan (Wesley) Yuan

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## EDUCATION

Ph.D. in Finance, Rutgers University 2016.9 – 2021.5 (*Expected*)

Thesis Title: Essays on Asset Pricing

Committee: Yangru Wu (Chair), Azi Ben-Rephael, Ren-raw Chen (External), Priyank Gandhi,  
Sophia Li, Ken Zhong

M.S. in Quantitative Finance, Rutgers University 2015 – 2016

B.S. in Remote Sensing and Information Engineering, Wuhan University 2011 – 2015

## RESEARCH INTERESTS

Empirical Asset Pricing, Derivatives Valuation, Machine Learning, Big Data

## WORKING PAPERS

1. "Specification Analysis: A New Model for the Joint Valuation of S&P 500 and VIX Options", *Job Market Paper*

Abstract: Analyzing the specifications of pricing models for the joint valuation of S&P 500 and VIX options, I find that the existing models cannot adequately represent the two options markets. I introduce a new factor that controls the higher-order moments of the risk-neutral return distribution. The model I propose significantly outperforms all other alternatives, and particularly improves the benchmark two-variance-factor model with co-jumps by 23.66% in-sample and 31.64% out-of-sample. The performance analysis shows that the better fit can be attributed to improvements in the modeling of both S&P 500 and VIX options, highlighting the model features that are critical for reconciling the two markets.

2. "Time-Varying Skew in VIX Derivatives Pricing", *Revise & Resubmit, Management Science*

Abstract: This paper proposes a new reduced-form model for the pricing of VIX derivatives that includes an independent stochastic jump intensity factor and co-jumps in the level and variance of VIX, while allowing the mean of VIX variance to be time-varying. I fit the model to daily prices of futures and European options from April 2007 through December 2017. The empirical results indicate that the model significantly outperforms all other nested models and improves on benchmark by 21.6% in-sample and 31.2% out-of-sample. The model more accurately portrays the

tail behavior of VIX risk-neutral distribution for both short and long maturities, as it successfully captures the time-varying skew found to be largely independent of the level of the VIX smile.

3. “Predicting Industry Returns: Machine Learners Meet News Watchers” (with Hao Jiang and Sophia Li)

Abstract: This paper uses machine learning-based as well as fundamental-driven, news-based approaches to uncover patterns of high-frequency return predictability for sector exchange-traded funds (ETFs). A LASSO predictor that aggregates high-frequency price movements of a broad universe of individual stocks predicts ETF returns out-of-sample. The news-driven return on ETF constituent firms positively predicts ETF returns, but the component of ETF returns orthogonal to the news return negatively predicts them. These different signals contain independent information, and have different strengths, with the LASSO predictor providing continuous flows of information most powerful during trading hours and the news return offering sporadic information particularly useful during market close. A composite signal combining all three signals with Gradient Boosted Regression Trees (GBRT) has very strong power to forecast ETF returns, especially during the Covid-19 pandemic.

4. “Market Right-Tail Risk Matters!” (with Yangru Wu)

Abstract: We propose a method to estimate relatively high frequent market left- and right-tail risks by constructing trading strategies with daily S&P 500 options. Our measures are forward-looking and show low correlations with other risk factors. We dissect pricing implications of tail risks for cross-sectional stock returns. Stocks more sensitive to left-tail (right-tail) risk exhibit lower (higher) returns. The right-tail risk premium is significant and partially absorbs the left-tail premium. Results also hold using equity portfolios and mutual funds as test assets. The widespread effect of right-tail risk on assets stands in contrast to previous findings that only negative jumps are priced.

5. “Gambling Preference in Loser Stocks”

Abstract: I discover that investors' preferences for gambling mainly involve stocks that have performed poorly in the past three months, as lottery-like stocks with poor performance are much more likely to generate large payoffs than those with good performance (61.53% vs. 40.17%). Furthermore, lotto investors tend to believe that lottery-like stocks with poor performance may have a vigorous rebound shortly, while those with good performance may be less likely to produce a highly positive return given their high prices. Therefore, lottery-like stocks with poor performance have a highly effective lottery-like look, and thus they attract lotto investors. On the other hand, loser stocks without lottery-like features may continue to perform poorly. Overly optimistic (pessimistic) beliefs about stocks with (without) lottery-like features result in a pronounced lottery premium among loser stocks.

## **SELECTED WORK IN PROGRESS**

6. “Intraday Stock Return Predictability and Machine Learning” (with Ben Sopranzetti and Cheng Gao)
7. “News and the Cross-Section of Option Returns”
8. “Unspanned Fear Premium in the Global FX Options Market” (with Hao Chang)

## **TEACHING EXPERIENCE**

<b>Lecturer of Professional Practice</b>	<i>Rutgers Business School</i>
Research Method in Finance (Master Level, 2 Sections)	<i>Fall 2020</i>
Research Method in Finance (Master Level)	<i>Scheduled, Spring 2021</i>
Financial Management for Finance Majors	<i>Scheduled, Spring 2021</i>
<b>Course Instructor</b>	<i>Rutgers Business School</i>
Corporate Finance	<i>Summer 2019</i>
<b>Workshop Instructor</b>	<i>Rutgers Business School</i>
SAS Programming (Master of Financial Analysis)	<i>Summer 2020</i>
<b>Recitation Instructor</b>	<i>Rutgers Business School</i>
Finance: <i>Fall 2016</i>	
Introduction to Finance: <i>Spring 2017</i>	
Financial Management (General): <i>Fall 2018, Spring 2019, Spring 2020</i>	
Financial Management for Finance Majors: <i>Fall 2016, Spring 2017, Spring 2019</i>	

## **HONORS AND AWARDS**

Dean’s Fund Summer Research Fellowship 2020, Rutgers Business School	<i>2020</i>
Dean’s Fund Summer Research Fellowship 2019, Rutgers Business School	<i>2019</i>
TA/GA Professional Development Fund, Rutgers Business School	<i>2018</i>
Dean’s Fund Summer Research Fellowship 2018, Rutgers Business School	<i>2018</i>
Ph.D. Summer Scholarship, Rutgers Business School	<i>2017</i>
Ph.D. Full Scholarships, Rutgers University	<i>2016 – 2020</i>

## **CONFERENCE AND SEMINAR PRESENTATION**

FMA Doctoral Student Consortium (2020, Scheduled); Ph.D. Seminar, Rutgers Business School (2017, 2018); Barclays Capital (2019, 2020)

## **INDUSTRY EXPERIENCE**

### **Summer Quantitative Associate**

Quantitative Analytics Practice (Desk Strategy, Credit Risk)

*Barclays Capital, New York*

*Summer 2020*

## **REFERENCES**

### **Prof. Yangru Wu**

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### **Prof. Hao Jiang**

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### **Prof. Azi Ben-Rephael**

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### **Prof. Ken Zhong**

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