

# Yueliang (Jacques) Lu

## Curriculum Vitae

April 2021

📍 Department of Finance (Friday 388), Belk College of Business, University of North Carolina at Charlotte, 9209 Mary Alexander Rd, Charlotte, NC 28262, USA.  
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### EDUCATION

2018 - 2023	<b>Ph.D. in Finance and Economics</b> Co-advised by Profs. <a href="#">Yufeng Han</a> & <a href="#">Weidong Tian</a>	University of North Carolina - Charlotte GPA: 4.00/4.00
2016 - 2017	<b>M.Sc. in Quantitative Finance &amp; Risk Analytics</b> Advised by Prof. <a href="#">Aparna Gupta</a>	Rensselaer Polytechnic Institute GPA: 3.97/4.00
2012 - 2016	<b>B.A. in Finance and Economics</b> Dual degree in English Language & Literature	Beijing Foreign Studies University

### PROFESSIONAL POSITIONS

2021 - 2023	<b>Instructor</b> , Department of Finance, UNC Charlotte
2018 - 2023	<b>Research/Teaching Assistant</b> , Department of Finance, UNC Charlotte
2019	<b>Summer Research Assistant</b> , Department of Management, UNC Charlotte
2017	<b>Teaching Assistant</b> , Department of Mathematical Sciences, Rensselaer Polytechnic Institute
2017	<b>Summer Research Assistant</b> , Lally School of Management, Rensselaer Polytechnic Institute
2017	<b>Research Fellow</b> , Global Association of Risk Professionals (June 2017 - December 2017)

### RESEARCH INTERESTS

- *Asset Pricing*: Empirical (and Theoretical) Asset Pricing, Anomalies, Derivatives and Options, Recovery
- *Financial Risk Management*: Systemic Risk, Longevity Risk, Asset-Liability Management
- *Application of Machine Learning in Finance*: Universal Portfolio

### PUBLICATIONS

1. [Addressing Systemic Risk Using Contingent Convertible Debt - A Network Analysis](#), *European Journal of Operational Research*, 2021, Vol 290, Issue 1, pp. 263-277 (with [Aparna Gupta](#) and [Runzu Wang](#)).

- **Best Paper Award, FMA Annual Meeting, 2018**
- Best Student Paper Award Finalist, INFORMS Annual Meeting, 2018
- [Masters Research Fellowship, Global Association of Risk Professionals \(GARP\), 2017](#)

### WORKING PAPERS

1. [What is the Time Series Regression of the Stock Market Return?](#) (with [Weidong Tian](#))
  - Presented at [CICF 2021 \(Scheduled, July 6-9\)](#),
  - We obtain a derivative-based formula of time series regression coefficients on the stock market return. We introduce a forward contract on a power VIX index (PVIX) calculated by market index options, and obtain a model-free future price of PVIX by using S&P 500 index options, VIX futures, and VIX index options. Our empirical results suggest a negative autocorrelation (resp. beta coefficient) between monthly market return, but the reversal level is relatively small compared to the past market returns, yielding a long-term positive trend (resp. intercept term). Moreover, the autocorrelation coefficients computed using derivatives are

primarily comparable to the corresponding statistical measure estimated by historical return data between two consecutive months; however, the time-series coefficients using derivatives are significant and more sensitive to the market in the volatile period. Finally, we demonstrate that the derivatives market's forward looking information helps predict future market return.

2. **Mispricing and Anomalies: An Exogenous Shock to Short Selling from the Dividend Tax Law Change** (with [Yufeng Han](#), [Weike Xu](#) & [Guofu Zhou](#))

- Presented at [SFS Cavalcade North America \(Scheduled, May 24-27\)](#), [MFA 2021](#), [AFA 2021](#), [SFA 2020](#), WashU Olin Finance Brownbag, and UNC Charlotte Finance Seminar
- We study the causal effect of short selling on asset pricing anomalies by exploiting a novel exogenous shock to short selling. After the Job and Growth Tax Relief Reconciliation Act (JGTRRA) of 2003, equity lenders are reluctant to lend shares around the dividend record dates because substitute dividends that they would receive are taxed at ordinary income rates while qualified dividends are taxed at 15 percent, thus creating a negative shock to short selling. Using arguably the most comprehensive set of anomalies to date and the difference-in-differences (DID) regression framework, we find that anomalies become stronger after the dividend record months in the post-JGTRRA periods, driven by stronger mispricing in the dividend record months. We further show that the effect mainly comes from the overpriced stocks. Overall, our results provide strong evidence that most anomalies are likely due to mispricing, with valuation anomalies as an exception.

3. **An On-line Machine Learning Return Prediction** (with [Weidong Tian](#))

- Presented at [INFORMS 2020 Annual Meeting](#), [International Risk Management Conference 2020 Annual Meeting](#); Accepted (canceled due to COVID-19) by [FMA European 2020](#) and [EFMA 2020](#).
- This paper presents a new prediction methodology on relative stock index return - the ratio of a stock index return to an interest rate. The prediction methodology relies on the on-line universal portfolio construction. We derive a closed-form predicting formula whose coefficients are solely determined by historical data and demonstrate that the average daily predictive error in 2010-2018 can be as small as 2 percent. This approach provides a promising application of on-line machine learning to return prediction.

## WORK IN PROGRESS

1. **Long-term Asset-Liability Management for Variable Annuities** (with [Aparna Gupta](#))

- Presented at the [Masters' Scholars Research Program](#), Rensselaer Polytechnic Institute

2. **Certainty Equivalent Interest Rate Parity** (with [Lloyd Blenman](#))

## CONFERENCE AND SEMINARS (\*presented by coauthors)

- 2021** SFS Cavalcade North America annual meeting (*Scheduled*)  
 China International Conference in Finance (CICF) annual meeting (*Scheduled*)  
 Midwest Finance Association (MFA) annual meeting\*  
 American Finance Association (AFA) annual meeting  
 UNC Charlotte Finance Seminar
- 2020** Southern Finance Association annual meeting  
 Washington University in St. Louis Olin Finance Brownbag  
 INFORMS (Virtual) annual meeting  
 International Risk Management Conference (IRMC) annual meeting  
 European Financial Management Association annual meeting (*Canceled due to COVID-19*)  
 Financial Management Association European annual meeting (*Postponed due to COVID-19*)
- 2019** UNC Charlotte Joint Doctoral Workshop
- 2018** INFORMS annual meeting  
 INFORMS annual meeting (Best Student Paper Competition)  
 Financial Management Association (FMA) annual meeting\*  
 European Financial Management Association (EFMA) annual meeting\*  
 International Risk Management Conference (IRMC) annual meeting\*

## DISCUSSIONS

- 2020** SFA "Range-based Expectations", by Natalie Zhu  
 FMA "The Early Exercise Risk Premium", by Kevin Aretzy and Adnan Gazi

## PROFESSIONAL SERVICE

- Session Chair** Southern Finance Association Annual Meeting 2020  
 Financial Management Association Annual Meeting 2020
- Committee Reviewer** Southern Finance Association Annual Meeting 2021  
 Eastern Finance Association Annual Meeting 2021

## TEACHING EXPERIENCE

### University of North Carolina at Charlotte

#### Instructor

- FINN 3120 Financial Management Summer 2021, Fall 2021
  - Key topics include: The Time Value of Money, Discounted Cash Flow Valuation, Interest Rates and Bond Valuation, Equity Markets and Stock Valuation, Risk and Return, and Cost of Capital

#### Guest Lecturer

- FINN 6216 Quantitative Risk Management (with Prof. Weidong Tian) Spring 2021
  - Topic 1: Volatility Trading: Implied volatility, VIX options, VIX futures, and Volatility derivatives pricing
  - Topic 2: Historical Simulation in the risk management (Value-at-Risk), Back testing, Stress testing

- Topic 3: Credit Risk: Structural (Merton) model, Reduced-Form model, and Altman's Z-Score method
- Recitation class: 2-hour class, and four times per semester

2. FINN 3226 Financial Theory & Practice (with Prof. Lloyd Blenman) Spring 2021

- Topic 1: Binomial Lattices and American Option Pricing

### Teaching Assistant

1. BPHD 8220 Financial Economic Theory II (Second-year Ph.D. course) Fall 2020
2. BPHD 8200 Financial Economic Theory I (First-year Ph.D. course) Fall 2020
3. FINN 6216 Quantitative Risk Management (M.S. in Math Finance) Spring 2021, 2020
4. FINN 3226 Financial Theory & Practice Spring 2021
5. FINN 3233 International Financial Management Spring 2020, 2019

### Rensselaer Polytechnic Institute

### Teaching Assistant with Recitations

1. Math 1010 Calculus I (with 4-hour recitation class to 120 students per week) 2017

## PROFESSIONAL MEMBERSHIP

American Finance Association (AFA)

Financial Management Association (FMA)

Global Association of Risk Professionals (GARP)

Institute for Operations Research and the Management Sciences (INFORMS)

## FELLOWSHIPS, GRANTS, AND AWARDS

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|-------------------------------------------------------------------------------------------------|-------------|
| Ph.D. Graduate Assistantship, University of North Carolina at Charlotte                         | 2018 - 2023 |
| Belk Summer Research Grant, University of North Carolina at Charlotte                           | 2021        |
| <a href="#">Seth Bonder Foundation Student Registration Grant</a> , INFORMS Annual Meeting      | 2020        |
| Ph.D. Travel Grant, <a href="#">American Finance Association (AFA)</a> Annual Meeting           | 2020        |
| Summer Research Assistantship, University of North Carolina - Charlotte                         | 2019        |
| Best Paper Award, <a href="#">Financial Management Association</a> (FMA) Annual Meeting         | 2018        |
| Best Student Paper Award Finalist, INFORMS Annual Meeting (Finance Section)                     | 2018        |
| Highlighted on RPI Admissions Website as Outstanding Graduate Scholar ( <a href="#">Links</a> ) | 2018        |
| Masters Research Fellowship Award, <a href="#">Global Association of Risk Professionals</a>     | 2017        |
| Graduate Teaching Assistantship, Rensselaer Polytechnic Institute                               | 2017        |
| Summer Research Assistantship, Rensselaer New Knowledge and Innovation Program                  | 2017        |
| Masters' Scholars Research Program Award, Lally School Rensselaer Polytechnic Institute         | 2017        |

## SKILLS AND CERTIFICATIONS

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|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Certifications</b>        | FRM Passed Part I and Part II, CFA Level III Candidate, Bloomberg Market Concept Certified.                                                       |
| <b>Technical Skills</b>      | Numerical/Simulation Analysis, Computational Optimization, Stochastic Calculus, Network Science, Bayesian/Time Series Analysis, Machine Learning. |
| <b>Programming Languages</b> | R, MATLAB, Python, Jupyter Notebook, Stata, Neo4j, Gephi, AMPL, and $\text{\LaTeX}$ .                                                             |
|                              | Native in Chinese, fluent in English, and active learner in Spanish.                                                                              |

**REFERENCE**

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