

## LIANGYI MU, CFA

Alliance Manchester Business School, The University of Manchester, M15 6PB

Email: liangyi.mu@manchester.ac.uk

Phone: +44 (0)7521654860

As a fourth-year Ph.D. candidate in finance and a Chartered Financial Analyst (CFA) certificate holder, I have expertise in business accounting & balance sheet and a variety of finance theories & methods, including Risk-Neutral Distribution, Market Microstructure, and the cutting-edge Recovery Theorem. With the experience in options based on equity indices, U.S. individual stocks, and FX currencies, I am familiar with OptionMetrics, Bloomberg, Tomson Reuters DataScope, CRSP, and DataStream datasets. I am proficient in utilizing the advantages of multi-software environment on the Big Data, such as handling tick-by-tick option big data with Python, conducting advanced statistical tests with R packages, and performing complex numerical computing with MATLAB.

### **Education and Qualification**

---

**Alliance Manchester Business School, the University of Manchester**

Oct 2017 – Present

Ph.D. student in Finance

Alliance Manchester Business School Doctoral Studentships;

Research Topic: Option implied information with high-frequency data;

Supervisors: Dr. Yoichi Otsubo and Prof. Alexandros Kostakis;

Expected completion of degree: September 2021.

#### **Chapter One: *Detecting Political Event Risk in the Option Market.***

(Revise and Resubmit at Journal of Banking and Finance)

- ❖ **Authors:** Alexandros Kostakis, Liangyi Mu, Yoichi Otsubo.
- ❖ **Keywords:** Political Event Risk, Option-Implied Information, Risk-Neutral Distribution, Implied Volatility Curve, Brexit Referendum.
- ❖ **Methods:** Non-parametric Risk-Neutral Distribution (Figlewski (2010)), Option-Implied Event Probability (Borochin and Golec (2016)).
- ❖ **Data:** Daily GBPUSD FX options data from the Chicago Mercantile Exchange, 10-minute intraday OTC GBPUSD FX options data from Bloomberg, daily FTSE 100 index options data from the Intercontinental Exchange.
- ❖ **Key findings:**
  - Option market can ex ante detect and quantify the event risk due to a scheduled political process;
  - GBPUSD options market exhibits bimodal risk neutral distribution and W-shaped implied volatility curve before the Brexit referendum date with modes indicating possible event outcomes;
  - Implied event probability and information about latent states can be extracted from option market;
  - Option market can distinguish the different impacts on different assets from the same political event.

#### **Chapter Two: *Market Quality and Price Informativeness: Evidence from Extended Trading Hours.***

(Undergoing revisions)

- ❖ **Author:** Liangyi Mu.
- ❖ **Keywords:** Market Design; Liquidity; Extended Trading Hours; Asymmetric Information; Informed Trading; Predictability.
- ❖ **Methods:** Market quality measures (trading volume, bid ask spread, information asymmetry), Spread Decomposition models (Huang and Stoll (1997), Lin, Sanger, and Booth (1995)), Difference-in-

differences analysis on market quality (Anand, Hua and McCormick (2016)).

- ❖ **Data:** Tick-by-tick S&P 500 index weekly options and SPDR options with all strikes and expiries from Tomson Reuters DataScope.
- ❖ **Key findings:**
  - Liquidity traders and informed traders have different intraday strategic decisions, resulting in intertemporal liquidity externality in option market;
  - Option market in extended trading hours presents low market quality and trading activity;
  - The introduction of extended trading hours has enhanced market quality in regular trading hours;
  - The option prices in extended trading hours are informative for the following regular trading hours.

### **Expected Chapter Three: *Beliefs and Preferences in the Option Market: Evidence from Climate Change Events.***

(In progress, a joint project with Xiangjin Shen from the Bank of Canada)

- ❖ **Expected contribution:**
  - Extract the ex-ante full value effect of transition risk due to climate change policy on different sectors;
  - Risk neutral distribution extracted from energy commodity options may exhibit bimodality around climate change policy decisions;
  - Distinguish the different impacts on the expectation of future stock price and risk preference from climate change;
  - The immediate impacts on physical distributions and risk preferences from climate change related events.

#### **Lancaster University Management School**

Oct 2015 – Sep 2016

MSc Quantitative Finance with overall Distinction

- Master Dissertation with Distinction: Empirical applications in NDX option market: Risk-neutral distribution and period-varying Risk Aversion analysis;

Keywords: Risk-Neutral Distribution, 2008 crises, NDX, Cumulative prospect theory, physical distribution;

- Participated in the CFA Institute Research Challenge 2016.

#### **Southeast University (Top 15 universities in China)**

Aug 2008 – Jun 2012

BSc Applied Physics

- Awarded by university as Merit Student in 2009;

#### **Conferences and Presentations**

---

##### **“Detecting political event risk in option markets.”**

- Alliance Manchester Business School Doctoral Conference, May 2018;
- SoFiE Financial Econometrics Summer School (The Econometrics of Foreign Exchange Markets), Kellogg School of Management, Northwestern University, July 2019;
- SoFiE Financial Econometrics Summer School (The Econometrics of Derivatives Markets), New York University Shanghai, August 2019.

##### **“Market Quality and Price Informativeness: Evidence from Extended Trading Hours.”**

- 6<sup>th</sup> Young Finance Scholars Conference, University of Sussex, June 2019;
- Federal of Business Disciplines / Southwestern Finance Association Annual Meeting, San Antonio, March 2020;

- British Accounting and Finance Association Annual Conference, University of Southampton, Cancelled due to Covid-19, April 2020;
- European Financial Management Association (EFMA) conference, Cancelled due to Covid-19, June 2020.

### **Teaching Experience**

**Teaching Assistant**, Alliance Manchester Business School. Oct 2018 – Present

- Course Facilitation: Young Undergraduates Overseas Immersion Programme 2018;
- Teaching Assistant: Investment Analysis (2019, 2020); Introduction to Corporate Finance and Financial Instruments (2019, 2020); Financial Engineering (2020);
- Organised workshops and seminars. Provided students tutorials. Marked exam papers. Prepare online materials.

### **Internship**

**Quantitative Strategy Analyst**, Shanghai Muxin Asset Management Co., Ltd. Oct 2016 – Dec 2016

- Tested a variety of trading strategies in China stock market, such as Dual Thrust and R-breaker.
- Developed a new trading strategy with outperformance in back-testing.

### **Work Experience**

**Quantitative Strategy Analyst**, Shanghai Muxin Asset Management Co., Ltd. Jan 2017 – Jun 2017

- Analysed research report. Collected and cleaned relevant data from China stock market. Conducted quantitative analysis. Built and back-tested investment strategies with MATLAB, Python, and WIND;
- Conducted performance analysis on trading strategies, such as attribution analysis, risk analysis, and sensitivity analysis;
- Built weekly market dynamic monitoring on capital flow, sentiment, and styles. Developed different programmed trading execution strategies based on market liquidity;
- Provided internal training courses of stock market for other employees in company.

#### **Achievements:**

- Developed a long-only trading strategy based on multifactorial and quantitative timing model in HS300 index. It achieved total return of 7.88% under management from April 2017 to Jun 2017;
- The asset under management was over 1000 million yuan. The number of funds under management was about 20.

**Assistant Manager**, Sichuan Mintai Real Estate Co., Ltd. China Jul 2012 – Jul 2015

- Analysed the impacts of Monetary and Fiscal factors and government policies on real estate industry;
- Compared and analysed rivals in this industry. Performed financial analysis on local real estate market;
- Helped the accountant with corporation finance, tax planning, financial operation. Reported the financial status to the executive manager. Conducted finance and investment analysis on projects, such as predicting cash flow and analysing breakeven point.

#### **Achievements:**

- The estate investment projects under management achieved a cumulative return over 60%;
- The engineering services projects under management achieved a net profit over 23% within one year.

### **Related Skills and Certificates**

- National Computer Rank Examination Certificate (C++ Grade II) (China);
- Certificate of Accounting Professional (China);

- Chartered Financial Analyst (CFA) charterholder.

### **Languages and IT**

---

- Chinese/Mandarin (Native) ; English (Fluent);
- Proficient in: MATLAB, Python, R, MS Office (PowerPoint, Excel, Word), VBA, C++, SAS.

### **Nationality**

---

Chinese, eligible to work in the UK.

### **References**

---

Dr. Yoichi Otsubo (Main Ph.D. supervisor)  
Lecturer in Finance  
University of Manchester  
M15 6PB  
Phone: +44 (0) 161 275 4025  
Email: yoichi.otsubo@manchester.ac.uk

Prof. Alexandros Kostakis (Ph.D. Cosupervisor)  
Head and Professor in Accounting and Finance  
University of Liverpool  
L69 7ZX  
Phone: +44 (0)151 795 3820  
Email: A.Kostakis@liverpool.ac.uk