

# YUHAO ZHU

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Nationality: China ◇ Country of Permanent Residency: the Netherlands

## WORK EXPERIENCE

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### Erasmus University Rotterdam

Sep. 2015 to present

*Ph.D. Candidate of Financial Economics*

*Rotterdam*

- Conducting research in Quantitative Financial Economics, Banking, and Applied Econometrics.
- Modelling financial and business topics, e.g., options, executive contracts, risk, and stock prices.
- Quantitative data analysis, e.g., econometrics, machine learning, non-linear optimization.
- Presenting and discussing papers at 6 international conferences and 5 research seminars.
- Teaching graduate-level course “Seminar Advanced Corporate Finance: Corporate Governance”.
- Giving lectures “Basic Econometrics for Data Analysis” and “Data Analysis with STATA”.
- Supervising theses of 28 Master students and 2 Bachelor students in Corporate Finance and Banking.
- See Page 2 for more descriptions on the projects (models, methods, data sets, tools and packages).

## EDUCATION

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### VU University Amsterdam & Tinbergen Institute<sup>†</sup>

Sep. 2013 to Aug. 2015

*M.Phil. in Economics (Finance track), cum laude*

*Amsterdam*

- GPA: 8.0/10.0
- Teaching assistant for graduate-level courses “Corporate Finance Theory” and “Statistics”.

### University of Groningen

Sep. 2011 to Aug. 2013

*BSc (Honors) in Economics and Business Economics*

*Groningen*

- GPA: 8.5/10.0

### Fudan University

Sep. 2009 to Aug. 2013

*BA in Economics*

*Shanghai, China*

- GPA: 3.78/4.00
- Fudan-Groningen Double Degree Program in International Economics & Business.
- Ranked 2nd in 2009 National Entrance Examination “Gaokao” (Shanghai region, social-science-oriented).

## TECHNICAL STRENGTHS

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### Skills

Econometrics, Machine learning, Statistical inference, Data visualization, Financial modeling, Model calibration, Game Theory, Stochastic calculus

### Computer languages

Python (SciPy, pandas, scikit-learn)  
Matlab, VBA for Excel, STATA, Object Pascal, L<sup>A</sup>T<sub>E</sub>X  
Git for version control, HTML for building personal website

### Certificates

GRE (V:154, Q:170), CFA Level I Passed

### Natural languages

Chinese (native), English (proficient), Dutch (basic, A2), Japanese (basic)

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<sup>†</sup>Graduate school and Institute for economic research of Erasmus University Rotterdam, University of Amsterdam and VU University Amsterdam.

## SELECTED PROJECTS

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### **“The real costs of CEO compensation - the effect of behindness aversion of employees”**

We establish a behavioral model where workers are inequality-averse. We manually collect data from annual reports and construct a database on German executive compensation. We also analyze the big data sets from the German Federal Employment agency using remote access. The implication is that the CEO compensation actually brings extra costs.

*Theoretical models:* behavioral economics, contract theory (game theory)

*Quantitative methods:* linear regression, logistic regression, diff-in-diff, ML estimation

*Data sets:* Establishment History Panel (BHP) at Federal Employment Agency (via remote access)  
Hand-collected German Executive Compensation data set, Datastream

*Tools and packages:* STATA, Python (sklearn, statsmodels, matplotlib)

### **“Wage gap and stock returns”**

We establish an asset-pricing model with noise traders and inequality-averse traders. We analyze the big data sets on German labor compensation. We find that firms with higher wage gap has positive risk-adjusted returns, which contributes to a trading strategy.

*Theoretical models:* asset pricing model, behavioral economics

*Quantitative methods:* time-series analysis, linear regression, Fama-MacBeth regression, visualization

*Data sets:* Establishment History Panel, German Executive Compensation data set, Datastream

*Tools and packages:* STATA, Python (matplotlib, Basemap, shapely, fiona), R

### **“Disclosure regulation and RMBS Liquidity”**

We analyze the effect of the ECB’s policy on the liquidity of RMBS in the secondary market. The policy requires that the RMBS who have collateral at the ECB need to obligatorily disclose the components of the security. We adopt the diff-in-diff model to analyze the data sets. We find that the policy increases the liquidity.

*Theoretical models:* banking, securities, treatment model

*Quantitative methods:* diff-in-diff, visualization, data cleaning and matching

*Data sets:* Bloomberg, European Datawarehouse, CABS, ECB eligibility dataset

*Tools and packages:* Python (openpyxl, matplotlib, pandas), STATA, VBA for Excel

### **“Probability-weighting CEOs and optimal contracts”**

I establish a financial model where the CEO is not only risk-averse but also probability weighting. Her risk attitude results in positive options holding in optimal compensation package. Then I write programs to validate and optimize my model with data on U.S. CEOs contracts.

*Theoretical models:* behavioral economics, contract theory, option pricing, stochastic calculus

*Quantitative methods:* calibration, non-linear optimization, integral

*Data sets:* Execucomp, Compustat, CRSP

*Tools and packages:* STATA, Python (numpy, scipy, pandas, matplotlib)

### **“Anti-corruption campaign and land-leasing in China”**

We want to see whether the anti-corruption campaign in 2012 affects the land-leasing activities in China. We write a web spider to download millions of land-leasing records from landchina.com and visualize the data set on a choropleth map.

*Quantitative methods:* web spider, visualization

*Data sets:* landchina

*Tools and packages:* Python (urllib, matplotlib, Basemap, shapely, fiona)