# ZHU, YUHAO

#### **PROFILE**

I am a Ph.D. candidate in finance at Erasmus University Rotterdam. I achieved my M.Phil. degree in Economics (research) at Tinbergen Institute, *cum laude*. My research focuses on asset pricing, behavioral finance and corporate governance. My greatest strength is econometrics and programming. I am also strong in communication and presentation.

#### **EDUCATION**

Erasmus University Rotterdam, the Netherlands Philosophiæ Doctor (Ph.D.) Candidate in Finance, expected in August 2018 Promoter: Prof. Dr. Ingolf Dittmann; Co-promoter: Dr. Sjoerd van Bekkum	2015 to present
<b>Tinbergen Institute &amp; VU University Amsterdam, the Netherlands</b> Master of Philosophy (M.Phil.) in Economics (Finance track), <u>cum laude</u> GPA: 8.0/10.0	2013 to 2015
University of Groningen, the Netherlands BSc (Honors) in Economics and Business Economics GPA: 8.5/10.0	2011 to 2013
Fudan University, China BA in Economics GPA: 3.78/4.00	2009 to 2013

#### RESEARCH INTEREST

Asset Pricing, Behavioral Finance, Corporate Governance, Executive Compensation

## WORKING PAPERS

"The real costs of CEO compensation - the effect of behindness aversion of employees" Joint work with Ingolf Dittmann and Christoph Schneider.

Presented at 12th CAFM 2017 Seoul, DGF 2017 Ulm\*, the Erasmus finance brown bag seminar series.

### "Wage gap and stock returns"

Joint work with Ingolf Dittmann and Maurizio Montone.

Presented at IFABS 2017 Ningbo, the IFABS Corporate Finance Conference at the University of Oxford\*, the Spanish Finance Association Meetings at Universitat Pompeu Fabra in Barcelona\*, the Behavioral Finance Working Group Conference at Queen Mary University of London\*, the Israel Behavioral Finance Conference at Tel Aviv University\*, and the Erasmus finance brown bag seminar series\*.

(\* stands for the paper being presented by a co-author at the conference.)

# WORKING IN PROGRESS

"Probability-weighting CEOs and optimal contracts" Single-authored.

# "Managerial optimism and investor sentiment"

Joint work with Ingolf Dittmann and Maurizio Montone.

## PRESENTATIONS AT SEMINARS & CONFERENCES

12th Conference on Asia-Pacific Financial Markets (CAFM) Seoul, Korea	a 201
Korean Securities Association	
IFABS 2017 Conference Ningbo, China	201
International Finance and Banking Society	
Tinbergen Institute Ph.D. Lunch Seminar	201
Tinbergen Institute	
Erasmus Finance Brown Bag Seminar	201
Erasmus University Rotterdam	
Tinbergen Institute Ph.D. Lunch Seminar	201
Tinbergen Institute	
TEACHING EXPERIENCE	
Thesis Supervisor for 9 Master Students	2017 to 201
Erasmus School of Economics, Erasmus University Rotterdam	
Instructor for Seminar "Advanced Corporate Finance: Corporate Govern	ıance"
	2017 to 201
Erasmus School of Economics, Erasmus University Rotterdam	
Guest Lecturer on Data Analysis with STATA	201
Erasmus School of Economics, Erasmus University Rotterdam	
Thesis Supervisor for 1 Bachelor and 5 Master Students	2016 to 201
Erasmus School of Economics, Erasmus University Rotterdam	
Instructor for Seminar "Advanced Corporate Finance: Corporate Govern	
	2016 to 201
Erasmus School of Economics, Erasmus University Rotterdam	
Thesis Supervisor for 14 Master Students	2015 to 201
Erasmus School of Economics, Erasmus University Rotterdam	
Teaching Assistant for Course "Corporate Finance Theory"	201
Tinbergen Institute	
Teaching Assistant for Course "Statistics"	201.
Tinbergen Institute	
AWARDS AND GRANTS	
12th CAFM 2017 Outstanding Paper Award	201
AFA Student Travel Grant	201
M.Phil. Full Scholarship, Tinbergen Institute	2013 to 201
Talent Scholarship, University of Groningen	2011 to 201
First-class Scholarship, Fudan University	201

2010

Second-class Scholarship, Fudan University

#### TECHNICAL STRENGTHS

Computer Languages Python (including numpy, scipy and pandas), Java

Statistical Software STATA, Matlab

Technical skills Calibration, Data analysis, Simulation, Visualization, Web crawler

#### LANGUAGE SKILLS

Chinese (native), English (fluent), Japanese (basic), Dutch (basic)

#### ADDENDUM: PAPER ABSTRACTS

"The real costs of CEO compensation - the effect of behindness aversion of employees" (Ingolf Dittmann, Christoph Schneider, Yuhao Zhu)

Do employees who compare themselves to the CEO matter for executive compensation? Using German establishment-level wage data, we show that employee wages are increasing in CEO compensation. When CEO compensation increases 1%, the median employees wage increases by about 0.04%. Higher CEO compensation also increases the probability for the existence of employee stock ownership plans. We use a difference-indifference setting to provide causal evidence for the relationship. Our findings suggest that behindness aversion of employees is an important driver of wages and increases the costs of executive compensation significantly. We structurally estimate a principal-agent model with two agents (CEO, representative employee) to identify the behindness aversion parameters.

## "Wage gap and stock returns"

(Ingolf Dittmann, Maurizio Montone, Yuhao Zhu)

We propose an asset pricing model in which the optimal wage gap between managers and workers increases with managerial skills. In a world with noise traders and short-sales constraints, we show that firms with lower wage gaps should trade at a premium, and the mispricing becomes even stronger if some investors exhibit inequality aversion. Using a unique data set of German firms, we provide strong support for the model's predictions. The results suggest that pay inequality within firms has important implications for asset prices.

# "Probability-weighting CEOs and optimal contracts"

(Yuhao Zhu)

Because of the option grants and other long-term incentives, CEO contracts feature increasing payperformance sensitivity (PPS). Previous literature use different theories to explain the convexity in CEO pay structure, but the optimal non-linear contract exhibits convexity only around the central region. In this paper, I make two contributions: First, I show that when CEOs assign higher probability to extreme cases, the optimal non-linear contract features convexity even if performance goes to the far end. This explains the existence of incentive pay and increasing PPS in CEO contracts. Second, I find that when stock returns follow a normal distribution, probability weighting generates an asymptotically normal distribution with different parameters. I use this sigma-mu transformation to approximate the probability weighting process, which helps give the close- form solution for the optimal non-linear CEO contract. Finally, I calibrate the model with observed contracts of US CEOs. To sum- marize, shareholders exploit probability-weighting to provide cheap incentives that encourage

CEOs to exert more effort.

#### "Managerial optimism and investor sentiment"

(Ingolf Dittmann, Maurizio Montone, Yuhao Zhu)

We analyze firms investment decisions in a world where both managers and investors are affected by sentiment. In equilibrium, we show that higher managerial optimism leads to an increase in employment growth, especially in times of low investor sentiment. If managers are initially overcautious, however, this mechanism is value-enhancing for the firm. Using data on U.S. publicly traded companies, we find evidence consistent with the models predictions. We also show that the stocks of companies with optimistic managers yield positive and robust risk-adjusted returns, which lends support to the view that the stock market does not price managerial skills correctly.

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