Cover Letter

Dear Sir or Madam,

My name is Hongye Guo, a 3rd year PhD student in Finance at Wharton. I am submitting my application to the Behavioral Macroeconomics Research Boot Camp as requested for your review. The application contains the following items:

1. This cover letter.
2. My CV, along with an unofficial transcript containing the list of the PhD classes that I have taken.
3. A two-page essay explaining my rationale for attending the boot camp.
4. One letter of recommendation from Professor Jessica Wachter, sent separately.

Should you have any question, please contact me at hoguo@wharton.upenn.edu, or 413-362-5218. If you have any question for Professor Wachter, please contact her at jwachter@wharton.upenn.edu, or 215-898-7634. Thank you very much for your help.

Much appreciated,
Hongye Guo

Hongye Guo

413-362-5218| hoguo@wharton.upenn.edu| 3620 Locust Walk, Room 2420B| Philadelphia, PA 19104

Research Interests

- Asset Pricing, Behavioral Finance

Education

The Wharton School, University of Pennsylvania Class of 2022

- PhD Candidate in Finance

Amherst College, Amherst MA Class of 2015

- Bachelor of Arts, Majors: Economics & Mathematics
- Cumulative GPA: 3.97/4.00, *summa cum laude, phi beta kappa (junior class)*

Harvard University, Cambridge MA 2013.9-2014.5

- Visiting Undergraduate Student.

Working Papers and Work in Progress

- "Superstitious" Investors. Joint with Jessica Wachter. Working paper.

Abstract: We consider an economy in which investors believe dividend growth is predictable, when in reality it is not. We show that these beliefs lead to excess volatility and return predictability. We also show that these beliefs are rational in the face of evidence on dividend growth. We apply this framework to explaining the value premium, predictability of bond returns, and the violation of uncovered interest rate parity.

- Underreaction, Overreaction, and Dynamic Autocorrelation of Stock Returns. Working paper.

Abstract: I document that in the US, the aggregate monthly stock returns correlate positively with past returns 2/3 of the time, and negatively 1/3 of the time. While the two arms of correlation are separately strong, they cancel with each other, leading to an average autocorrelation that is only weakly positive. I argue this pattern of aggregate return predictability will be generated if investors fail to see the time-varying autocorrelation structure of earnings news. In this model, investors act as if they have underreacted to past news 2/3 of the time, and overreacted to past news 1/3 of the time. I then look out-of-sample and find affirmative evidence in the cross section and the international stock markets. The paper shows that the traditional views on stock return autocorrelation misses important information, which is that it varies over time.

- Preference for Early Resolution and Asset Prices, joint with Hengjie Ai, Ravi Bansal, and Amir Yaron. Work in progress.

Abstract: This paper develops an asset prices based axiom and present corresponding empirical evidence for preference for early resolution of uncertainty. Our main theorem states that the representative agent prefers early resolution of uncertainty if and only if index options require a positive premium during the period of resolution of informativeness of macroeconomic announcements. Empirically, we found strong support for preference for early resolution of uncertainty based on evidence on the dynamics of the implied volatility of S&P 500 index options around FOMC announcements.

- Predation or Self-Defense? Endogenous Competition and Financial Distress, joint with Hui Chen, Winston Dou, and Yan Ji. Work in progress.

Abstract: Firms tend to compete on prices more aggressively when they are in financial distress. More intense competition can in turn reduce firms' profit margins and push firms further into distress. To quantify the feedback effect between industry competition and financial distress and the predatory incentives, we incorporate supergames of price competition into a model of long-term debt and strategic default. We show that this feedback mechanism has important implications on asset prices and financial contagion. Depending on the heterogeneity in customer bases and financial conditions across firms in an industry as well as between incumbents and new entrants, firms can exhibit a rich variety of strategic interactions, including predation, self-defense, and collaboration. Finally, we provide empirical support for our model's predictions.

Academic Experience

The Wharton School, University of Pennsylvania Philadelphia, USA 2017.7-2018.7

Research Assistant for Professor Jessica Wachter

The Wharton School, University of Pennsylvania Philadelphia, USA 2017.7-2018.7

Research Assistant for Professor Amir Yaron

Liberal Arts Initiative Summer School (LAISS), Amherst, USA 2012.10-2015.5

Founder and Chair

- Aims to bring the ideal of liberal arts education to young Chinese students. Each year invites three Amherst College professors to teach a two week summer school of subjects like Economics, Political Science, and History in China.
- Raised a revenue of 55,000 dollars within the first year and a revenue of 200,000 dollars within the first three years.
- The program evolved into a recruiting channel of Amherst College in China, accounting for about 40% of the incoming class from the country (as of 2018).

Industry Research Experience

Arrowstreet Capital, LP – A 100 Billion USD Quantitative Fund, Boston, USA Summer 2014, 2015.8-2017.7

Research Associate; Interned Associate (Summer 2014)

- Researched on various micro- and macroeconomic factors that predict the cross section of global stock returns and transformed those factors into quantitative signals that govern trading strategies. Developed explanatory theories behind the predictive power of those factors and drew testable implications. Applied various econometric methods in the back-test of the strategies and the validation of the explanatory theories.
- Designed and supervised an intern research project that applies variations of the Fama-McBeth regression to evaluate the performance of the short-term stock return forecasting models, while purging the effect of the stylized betas. The new method is released in production and used by the entire research team to breakdown and understand model performance.
- Researched on a data processing algorithm aiming to capture the effect of the micro level movements of a school of market participants and their interaction with other players in the stock market.

Amherst College Investment Office, Amherst, USA 2014.9-2015.5

Research Intern

- Designed and executed a project that estimates the endowment's exposure to various stylized betas across various asset classes. Implemented statistical techniques to address concerns about stale returns and beta underestimation.
- Computed private equity fund returns with Public Market Equivalent (PME) models. Tested multiple variations of the PME models to overcome technical difficulties such as multiple solutions and no solution in IRR computation.

Awards in Mathematics and Economics

- **Jacobs Levy Equity Management Dissertation Fellowship in Quantitative Finance**, 2019
- **Miller, Anderson & Sherrerd Fellowship**, given to the top scorer in Wharton's Finance PhD preliminary exam, 2018
- **Bernstein Prize**, given to the Amherst College senior who has done outstanding honors work in economics, 2015
- **Economics Junior Class Prize**, given to the Amherst College junior with the best performance in economics, 2014
- **Economics Fellowship**, given to selected Amherst College students to do economics research over the summer, 2013
- **Walker Prize**, given to the Amherst College freshman & sophomore with the best performance in math, 2012, 2013
- **First Place Individual**, *Mathematic Association of America Collegiate Competition*, *Northeastern section,* 2012
- **First Rank in Amherst College**, *William Lowell Putnam Mathematics Competition*, 2011
- **World Champion***, 2011 Junior Achievement-Mastercard Global Business Challenge,* 2011
- **First Prize**, *The National High School Mathematics Competition of China*, 2009, 2008, 2007

Computer Skills

- Programming experience with Stata, Matlab, and R.

References

Jessica Wachter, Richard B. Worley Professor of Financial Management, Professor of Finance, University of Pennsylvania

- Tel: 215-898-7634 Email: jwachter@wharton.upenn.edu

Amir Yaron, Robert Morris Professor of Banking & Finance, University of Pennsylvania

- Tel: 215-898-1241 Email: yarona@wharton.upenn.edu

John Campbell, Morton L. and Carole S. Olshan Professor of Economics, Harvard University

- Tel: 617-496-6448 Email: john_campbell@harvard.edu

Unofficial Transcript as of: 12/08/19 22:10:54 PM

AT THE GRADUATE LEVEL

*** * * * * * * * * * ACADEMIC PROGRAM * * * * * * * * * * ***

School: WHARTON
Division: WHARTON PHD
Degree Program: DOCTOR OF PHILOSOPHY
Graduate Group: FINANCE

*** * * * * UNIVERSITY OF PENNSYLVANIA COURSE WORK * * * * * ***

Fall 2017	**WHARTON PHD**				
ECON	701	MICROEC THEORY I	1.00	CU	A+
ECON	705	ECONOMETRICS I: FUND	1.00	CU	A
FNCE	911	FINANCIAL ECONOMICS	1.00	CU	A+
FNCE	928	METHODS IN FNCE THEORY	1.00	CU	A
		Term Statistics:	4.00	CU	
		Cumulative:	4.00	CU	
Spring 2018	**WHARTON PHD**				
ECON	706	ECONOMETRICS II: METHODS	1.00	CU	A-
FNCE	912	CORP FNCE AND FIN INSTIT	1.00	CU	A
FNCE	921	INTRO EMPIR METHODS FIN	1.00	CU	A-
FNCE	924	INTERTEMPORAL MACRO FIN	1.00	CU	A
		Term Statistics:	4.00	CU	
		Cumulative:	8.00	CU	
Fall 2018	**WHARTON PHD**				
FNCE	925	TOPICS IN ASSET PRICING	1.00	CU	A+
FNCE	926	EMPIRICAL METH CORP FN	1.00	CU	A-
FNCE	934	EMPIRICAL METH IN ASSET	1.00	CU	A
FNCE	937	APPLIED QUANTITATIVE MET	1.00	CU	A+
		Term Statistics:	4.00	CU	
		Cumulative:	12.00	CU	
Spring 2019	**WHARTON PHD**				
ECON	722	ECONOMETRICS IV: ADV	0.50	CU	A
ECON	722	ECONOMETRICS IV: ADV	0.50	CU	A
FNCE	922	CONTINUOUS-TIME FIN ECON	1.00	CU	A
STAT	962	ADV METHODS APPLIED STAT	1.00	CU	A
		Term Statistics:	3.00	CU	
		Cumulative:	15.00	CU	
Fall 2019	**WHARTON PHD**				
STAT	961	STATISTICAL METHODOLOGY	(1.00)	CU	NR

STAT	970	MATHEMATICAL STATISTICS	1.00	CU	A+
STAT	991	SEM IN ADV APPL OF STAT: High Dimensional and Nonparametric Bayes	(1.00)	CU	NR
		Term Statistics:	1.00	CU	
		Cumulative:	16.00	CU	

Spring 2020 **WHARTON PHD**

STAT	927	BAYESIAN STATISTICS	(1.00)	CU	NR
		Term Statistics:	0.00	CU	
		Cumulative:	16.00	CU	

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Passed Doctoral Qualifications Evaluation: 06-14-18

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My interests in human behaviors and their roles in the economy arise from two places: experience doing research in the asset management industry, and as a Finance PhD student.

While in college I took a behavioral finance class, through which I grew fascinated by the role human behavior plays in the capital market. Spurred by this interest, I joined Arrowstreet Capital, a 100 billion USD quantitative fund, as a researcher. This job granted me a front-row seat in observing how human and institution behaviors influence the capital market, and a first-hand experience arbitraging against their potential behavioral bias: I observed how a sizable real money investor interacts with financial intermediaries and economic entities such as banks, corporations, and pensions. I researched the efficacy of various strategies that capture the behavioral bias of market participants such as forecasting economists, and monitored the boom-and-bust of those strategies on a day-to-day basis. These enriching experiences bore me a long way towards my career goal of becoming an economist, and have tilted my research interest towards human behavior and the capital market.

Driven by my desire to conduct rigorous academic research, I joined the PhD program in finance at Wharton, where I have been exploring the field of behavioral finance. After my first semester, Professor Jessica Wachter kindly invited me to work on a joint project with her, where behavioral bias of investors plays the central role. The paper ties multiple puzzles in the financial market to the same idea---investors believe that there is more predictability than there actually is. The paper, titled "Superstitious" Investors, can be found on SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3245298. To further my understanding of the field of behavioral economics, I attended the Yale Behavioral Finance Summer School. In additional to providing me with a systematic background of behavioral finance, the summer school has also inspired me to write a paper in the field. The paper, titled Underreaction, Overreaction, and Dynamic Autocorrelation of Stock Returns, can also be found on SSRN: https://ssrn.com/abstract=3480863. The paper documents a novel form of return predictability that works in both the aggregate market and the cross section, and also shows that it exists in both the US and the global financial markets. The unifying

paradigm is that investors, under cognitive restrictions, fail to fully anticipate parameter variability even though such variability is highly predictable.

While both of papers reside more in the field of behavioral finance, in the future I am also hoping to explore how behavioral science and psychology can be applied in the field of macroeconomics. This interest arises in part from the rich macro-related resources at Wharton, and in part from me serving as a teaching assistant for two macroeconomics classes this semester---one for Professor Joao Gomes and Professor Tim Landvoigt, and the other for Professor Steve Meyer. What happens if there are systematic misperceptions in those general equilibrium models? What happens if the agents in those models have bounded rationality? I believe the workshop can potentially shed light on those generic questions. Furthermore, it may help me pin down more specific and novel questions to ask. Therefore, I believe that the enriching opportunity afforded by the NBER Behavioral Macroeconomics Research Boot Camp will help me greatly in developing future research agenda, and that my background at Arrowstreet and Wharton will also add some value to the program itself.

Gmail by Google

Elisa Pepe <epepe@nber.org>

Letter for Hongye Guo

Wachter, Jessica A <jwachter@wharton.upenn.edu> Tue, Dec 10, 2019 at 9:48 AM
To: "epepe@nber.org" <epepe@nber.org>

Dear Review Panel,

It is my pleasure to strongly recommend Wharton Ph.D. student Hongye Guo for admission to the behavioral macroeconomics boot camp on March 12th.

Hongye is a star student in our Ph.D. program. Though in his third year, he has three excellent papers, and will almost certainly be on the academic job market next year as a fourth-year student. His solo-authored job market paper uncovers a striking empirical regularity in asset returns that has the potential to overturn a decades-long consensus on the low level of asset return autocorrelation. He then builds a theory to explain this finding, based on extrapolation in investor beliefs. This paper, like his co-authored paper with me (in which he delves into survey data to uncover links between the value anomaly and the volatility puzzle), is squarely in the behavioral literature. Hongye has been an active member of a reading group that I have put together that is joint with the Penn Psychology department, so he is very strongly committed to behavioral finance.

Hongye is a creative yet disciplined thinker. He would be a great addition to your intellectual community in March.

Please note that I am writing letters to your program for two students: Hongye Guo and Sophia Hua. Hongye is the stronger student, so if you must only choose one, you should choose him. However, Sophia is also, in absolute terms, an excellent student, and I would strongly encourage you to take both if you possibly can.

Best wishes,

Jessica

Jessica A. Wachter
Richard B. Worley Professor of Financial Management
Professor of Finance
The Wharton School, University of Pennsylvania
3620 Locust Walk
Philadelphia, PA 19104
Homepage: http://finance.wharton.upenn.edu/~jwachter/