

Mu ZHANG

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EDUCATION

Ph.D. in Economics, Princeton University (Expected June 2022)	2016-present
M.A. in Economics, Princeton University	2016-2018
B.Sc. in Mathematics, Tsinghua University	2013-2016
B.A. in Economics and Finance, Tsinghua University	2012-2016

RESEARCH FIELDS

Primary: Decision Theory
Secondary: Market Design, Behavioral Economics

WORKING PAPERS

“A Theory of Choice Bracketing under Risk”

Aggregating risks from multiple sources can be complex and demanding, and decision makers usually adopt heuristics to simplify the decision process. This paper axiomatizes two such heuristics, narrow bracketing and correlation neglect, by relaxing the standard independence axiom in the expected utility benchmark. Our representation theorem allows for either narrow bracketing, or correlation neglect, or both of them. The flexibility of our framework allows for applications in various setups. For example, we accommodate the experimental evidence in narrow bracketing and risk aversion over small gambles with background risk. In intertemporal choices, we show how our framework unifies three seemingly distinct models in the literature and introduce a new model that can satisfy many desirable normative properties in time preferences simultaneously, including indifference to time resolution of uncertainty, dynamic consistency and separation of time and risk preferences. One special class of the model shares the same predictions as Epstein and Zin (1989) in macroeconomics and finance applications, and is immune to the critique in Epstein, Farhi, and Strzalecki (2014).

“Maxmin Implementation” with Rui Tang (Revise and Resubmit at *Journal of Economic Theory*)

This paper studies the implementation problem of a mechanism designer with ambiguity averse agents. The mechanism designer, desiring to implement a choice correspondence, can create ambiguity for the agents by committing to multiple allocation rules and transfer schemes without revealing which one to use. By extending the cyclical monotonicity condition from choice functions to choice correspondences, we show that the condition can fully characterize implementable choice correspondences. We apply the characterization to investigate public procurement problems. Specifically, we show that a government, who wants to delegate a project to one of her most desired firms, can strictly benefit from concealing the tie-breaking rules. An intuitive and computationally tractable condition is provided to characterize when the government’s preference induces an implementable choice correspondence.

“Market Design and Walrasian Equilibrium” with Faruk Gul and Wolfgang Pesendorfer

We establish the existence of Walrasian equilibrium for economies with many discrete goods and possibly one divisible good. Our goal is not only to study Walrasian equilibria in new settings but also to facilitate the use of market mechanisms in resource allocation problems such as school choice or course selection. We consider all economies with quasilinear gross substitutes preferences but allow agents to have limited quantities of the divisible good (limited transfers economies). We also consider economies without a divisible good (nontransferable utility economies). We show the existence and efficiency of Walrasian equilibrium in limited transfers economies and the existence and efficiency of strong (Walrasian) equilibrium in nontransferable utility economies. Finally, we show that various constraints on minimum and maximum levels of consumption

and aggregate constraints of the kind that are relevant for school choice/course selection problems can be accommodated by either incorporating these constraints into individual preferences or by incorporating a suitable production technology into nontransferable utility economies.

“Optimism in Choices over Menus” with Rui Tang

We model a decision maker who anticipates her preference to change in the future and optimistically evaluates each menu according to the best choice that could possibly be made by her future self. We characterize this menu preference, discuss the uniqueness of our representation and propose a comparative measure of optimism. We illustrate how our model connects optimism with the naive quasi-hyperbolic discounting model introduced by O’Donoghue and Rabin (1999, 2001). Our model also predicts the disjunction effect in choices over menus.

“Information Aggregation under Ambiguity” with Pëllumb Reshidi and João Thereze

We study information aggregation when an observer is ambiguous about the precisions of her information sources. The observer estimates a payoff-relevant state by minimizing quadratic loss according to MaxMin Expected Utility, and updates her beliefs prior by prior, which induces ambiguity regarding the state. We show that this ambiguity does not vanish even if the number of information sources grows indefinitely, and characterize the asymptotic set of posteriors the observer entertains. When information sources are unbiased signals, the observer learns the state correctly. In contrast, when the observer has access only to other agent’s guesses, her estimate converges away from the truth with probability one.

PUBLICATIONS

“A Robust Reference-Dependent Model for Speculative Bubbles” with Jie Zheng, *Journal of Economic Behavior & Organization* 137: 232-258, 2017.

We present a robust model of speculative bubbles by introducing loss-averse reference-dependent preferences by Koszegi and Rabin (2006) into the framework of Allen et al. (1993), where in equilibrium, asymmetrically-informed rational investors buy overvalued assets, hoping to sell them to less informed agents before the crash occurs. With reference-dependent preferences, the asset price may not necessarily be observable to agents when there is no trade. However, this is never the case with classical preferences, as shown in the paper. Incorporating the classical model as a special case, we generalize the notion of bubbles to allow for the analysis in the case of a silent market with unobservable prices, and our model is able to generate strong bubbles robust to moderate perturbations in parameters without the need for stronger conditions as suggested in previous literature. Assuming for simplicity that dividends can only take on two values, we construct an example of a robust reference-dependent bubble which is not robust in the classical setting, and we also show that the positive results regarding the limit of the bubble size and bubble frequency in the classical setting are preserved in our framework. Our main results and economic implications remain valid in more general settings.

FELLOWSHIPS, AWARDS, AND HONORS

Dietrich II Economic Theory Center Research Grant	2020
Goldfeld Summer Fellowship	2019-2020
The Robert W. Ballanyine *48 Graduate Fellowship	2017
Princeton University Graduate Fellowship	2016-present
Tang Lixin Fellowship, Tsinghua University	2015
Chen Xiaoyue Scholarship, Tsinghua University	2015
National Scholarship, China	2014

RESEARCH EXPERIENCE

Research Assistant for Professor Motohiro Yogo, Princeton University	2018
Research Assistant for Professor Faruk Gul, Princeton University	2017
Research Assistant for Professor Dilip Abreu, Princeton University	2016
Research Assistant for Professor Jie Zheng, Tsinghua University	2014-2015

TEACHING EXPERIENCE

ECO501, Microeconomic Theory I, Princeton University Fall 2019, Fall 2020
Teaching Assistant for Professor Faruk Gul and Pietro Ortoleva

ECO362, Financial Investments, Princeton University Fall 2018, Fall 2019, Fall 2020
Teaching Assistant for Professor Motohiro Yogo

ECO101, Introduction to Macroeconomics, Princeton University Spring 2019
Teaching Assistant for Professor Elizabeth Bogan

Principles of Economics, Tsinghua University Fall 2015, Spring 2016
Teaching Assistant for Professor Yingyi Qian and Professor Xiaohan Zhong

PROFESSIONAL ACTIVITIES

Referee: *Econometrica*, *Journal of Economic Theory*

Session Chair: 2021 North American Winter Meeting of the Econometric Society

CONFERENCE PRESENTATIONS

North American Winter Meeting of the Econometric Society 2020, 2021
Asian Meeting of the Econometric Society 2019
Tsinghua Conference on Behavioral, Experimental and Theoretical Economics 2019
5th World Congress of the Game Theory Society 2016
11th Econometric Society World Congress 2015
Chinese Economist Society China Conference 2015

ADDITIONAL INFORMATION

Citizenship: Chinese
Languages: English (proficient), Chinese (native)
Birth year: 1995

Last updated: Feb. 6th, 2021