HANG ZHOU

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EDUCATION

University of California, Davis *2014 - 2020(Expected)*
PhD in Economics Davis, CA

University of California, Davis *2014 - 2015*
MA in Economics Davis, CA

Tsinghua University *2010 - 2014*
BA in Economics Beijing, China

RESEARCH INTEREST

Microeconomic Theory, Behavioral Finance, Market Microstructure, Level-k thinking

RESEARCH

Working paper:

- **Informed speculation with k-level reasoning** (Job Market Paper)
  This paper investigates the effect of strategic reasoning on financial markets by studying Kyle (1989) with the level-k thinking framework introduced by Nagel (1995). A level-k speculator performs k rounds of iterative reasoning to infer information from asset prices. In contrast to the rational expectations equilibrium, the level-k framework produces a unified theory of momentum and contrarian trading strategies. I discuss how the distribution of speculators' sophistication levels affects several market variables and sheds new light on empirical patterns such as: (1) overreaction of asset prices, (2) the excess volatility puzzle, and (3) the excessive trading volume puzzle. Moreover, I show the sufficient conditions of which the level-k strategy converges to the rational expectations equilibrium.

- **Investors sophistication and information revealed by price**, with Andrés Carvajal
  This paper studies whether sufficient sophistication leads to the rational expectations equilibrium (Radner (1979)). We consider a simple exchange economy with complete markets and asymmetric information. The fundamentalists, i.e., traders who know the true probability distribution, maximize their expected utility. The speculators, i.e., the uninformed traders learn the mapping from prices to probabilities in a level-k thinking way. We show that under standard utility functions (CRRA and CARA), speculators' learning process converges to the rational expectations equilibrium uniformly if the fundamentalists are wealthier than the speculators in all states. We also find the convergence conditions for general utility functions.

- **Extensive form level-k thinking**, with Burkhard Schipper
  We propose a new solution concept: extensive form level-k thinking. We consider a situation where players may learn about levels of opponents during the play of the game because some information sets may be inconsistent with certain levels, which is different from the dynamic level-k thinking as in Ho and Su (2013). In particular, for any information set reached, a level-k player attaches the maximum level-l thinking for l < k to her opponents consistent with the information set. We compare extensive-form level-k thinking with other solution concepts such as extensive-form rationalizability and iterated admissibility. In addition, we design an experiment in the spirit of Arad and Rubinstein (2012) to identify players' extensive form levels.

- **A discussion on the Symmetric Bayesian Nash equilibrium in Kyle 1989**
  This paper points out a mistake in the solution of symmetric Bayesian Nash equilibrium in Kyle (1989). This mistake arises as the original solution imposes symmetry incorrectly. This paper proposes the correct solution and numerically shows the differences between the original solution and the suggested solution. I show the differences become larger when there are fewer informed speculators.

PRESENTATIONS

- 2017: Econometric Society Summer School (NUS, Singapore); North American Econometric Society Summer Meeting (UC Davis)
- 2018: Macro brownbag seminar (UC Davis); Memorial Conference for Martine Quinzii (UC Davis)
- 2019: Seminar presentations (UN Reno, UW Bothell)

HONORS AND AWARDS

- UC Davis: Job market fellowship 2019
- UC Davis: Dissertation research support award 2018
- UC Davis: Summer research support 2018
- UC Davis: Nonresident tuition fellowship 2014-2018
- Tshinghua University: Excellent academic performance award 2013

RESEARCH EXPERIENCE

- Research assistant to Professor Alex White, Tsinghua University 2012-2013
- Research assistant to Professor Taoxiong Liu, Tsinghua University 2012-2013
- Research assistant to Professor Andrés Carvajal, UC Davis 2016-2017

TEACHING EXPERIENCE

- **UC Davis**, Teaching assistant 2015-2019
  Intermediate Micro (×3); Game theory; Economics of Uncertainty (×2); Econometric (×2); Health Economics; Decision making; Financial Economics (×2);

SKILLS

- Computer skills: Matlab, Stata, Python, R
- Language: Chinese (native); English (Fluent)

PERSONAL INFORMATION

- Citizenship: Chinese (F1 visa)
- Gender: Male

DISSERTATION COMMITTEE AND REFERENCE

Andrés Carvajal (Chair)
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