

FTG Summer School: Frictions in Firms and Markets

Ambiguity Aversion

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The Ellsberg paradox seems to represent a significant departure from expected utility maximization. The theory of ambiguity aversion (or uncertainty aversion) has developed largely in response to the paradox. The goal of this session is to provide you a gateway both to the theoretical tools related to ambiguity aversion and to applications in finance. In the session, we will only be able to touch on a couple of specific applications. A number of other recent applications in finance are listed at the end of this document.

The session will cover the following topics:

- Ellsberg paradox and multiple priors.
- Some common theoretical approaches to ambiguity aversion.
 - Maxmin expected utility, smooth ambiguity aversion, multiplier preferences.
- Some applications of ambiguity aversion in finance.
 - Non-participation in financial markets, security design.

Readings for the session

We will focus on the readings marked (*). The paper titles embed links to the papers.

Ellsberg paradox and theoretical approaches to ambiguity aversion

Ellsberg, D. (1961), “[Risk, Ambiguity, and the Savage Axioms](#),” *Quarterly Journal of Economics* 75(4): 643-669.

(*) Machina, M. and M. Sinscalchi (2014), “[Ambiguity and Ambiguity Aversion](#),” *Handbook of the Economics of Risk and Uncertainty*, Chapter 13, ed. Mark Machina and Kip Viscusi, Elsevier.

Non-participation in financial markets

(*) Dow, J. and S. Werlang (1992), “[Uncertainty Aversion, Risk Aversion, and the Optimal Choice of Portfolio](#),” *Econometrica* 60(1): 197–204.

Easley, D. and M. O’Hara (2009), “[Ambiguity and Nonparticipation: The Role of Regulation](#),” *Review of Financial Studies* 22(5): 1817–1843.

Security design

Lee, S. and U. Rajan (2019), “[Robust Security Design](#),” Working paper, SSRN.

(*) Malenko, A. and A. Tsoy, “[Asymmetric Information and Security Design Under Knightian Uncertainty](#),” Working paper, SSRN.

Idiosyncratic sample of other applications of ambiguity aversion

Epstein, L. and M. Schneider (2010), “[Ambiguity and Asset Markets](#),” *Annual Review of Financial Economics* 2: 315–346. (Asset markets.)

Dicks, D. and P. Fulghieri (2015), “[Ambiguity, Disagreement, and Allocation of Control in Firms](#),” Working paper, SSRN. (Governance.)

P. Augustin and Y. Izhakian (2019), “[Ambiguity, Volatility, and Credit Risk](#),” forthcoming, *Review of Financial Studies*. (CDS spreads.)

Garlappi, L., R. Giammarino, and A. Lazrak (2017), “[Ambiguity and the Corporation: Group Disagreement and Underinvestment](#),” *Journal of Financial Economics* 125(3): 417–433. (Board decision-making.)

Miao, J. and A. Rivera (2016), “[Robust Contracts in Continuous Time](#),” *Econometrica* 84(4): 1405–1440. (Contracting)