

Beauty Contests and Fat Tails in Financial Markets

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Abstract

This study seeks to explain the emergence of fat-tailed distributions of trading volumes and asset returns in financial markets. We use a rational expectations form of the herding model. In the model, traders infer other traders' private signals regarding the value of an asset by observing their aggregate buying actions. The rational expectations equilibrium outcome entails an upward sloping demand curve. This is because the information contained in others' signals is more encouraging than is reflected in the incremental price. That is, there are strategic complementarities in informed traders' buying actions. In this environment, we show that equilibrium trading volumes and asset returns follow fat-tailed distributions without making any parametric assumptions on private signals. Specifically, we demonstrate that the trading volume follows a power-law distribution when the number of traders is large and the signal is noisy. Furthermore, we provide simulation results to show that our model successfully reproduces the observed distributions of daily stock returns.