

Simulating Risk-Aversion in Empirical Stock Returns Distributions

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In this paper we explore the idea that the skew-normal distribution is a good representation of the subjective probability distribution used by stock traders under non-neutral risk preferences. We develop an agent based model of a stock market in which traders draw their future price estimates from the skew-normal distribution, and we show that we are able to evolve a population of trading agents which generates realistic returns distributions, in terms of capturing the stylised facts of empirical return series. Trading agent populations are evolved using a genetic algorithm (GA) based approach.

The data used for our empirical distributions are that of the daily GE and IBM closing prices on the NYSE.